SCREENING SITE INSPECTION REPORT
FOR
B. F. GOODRICH CHEMICAL COMPANY
HENRY, ILLINOIS
U.S. EPA ID: ILT180010324
SS ID: NONE
TDD: F05-8808-039
PAN: FIL0302SA

MAY 4, 1990

ecology and environment, inc.
111 WEST JACKSON BLVD., CHICAGO, ILLINOIS 60604, TEL. 312-663-9415
International Specialists in the Environment

SIGNATURE PAGE
FOR
SCREENING SITE INSPECTION REPORT
FOR
B. F. GOODRICH CHEMICAL COMPANY
HENRY, ILLINOIS
U.S. EPA ID: ILT180010324
SS ID: NONE
TDD: F05-8808-039
PAN: FIL0302SA

Prepared by: Daniel Sullivan for Kurt Sims Date: 5-4-90
Kurt Sims
FIT Team Leader
Ecology and Environment, Inc.

Reviewed by: Regina Bayer for Marilou Martin Date: 5/4/90
Marilou Martin
FIT State Coordinator
Ecology and Environment, Inc.

Approved by: Kathleen J. Kelly for JDO Date: 5/4/90
Jerome D. Oskvarek
FIT Office Manager
Ecology and Environment, Inc.

TABLE OF CONTENTS

Table of Contents (Cont.)

LIST OF FIGURES

LIST OF TABLES

1. INTRODUCTION

Ecology and Environment, Inc., Field Investigation Team (FIT) was tasked by the United States Environmental Protection Agency (U.S. EPA) to conduct a screening site inspection (SSI) of the B. F. Goodrich Chemical Company (B. F. Goodrich) site under contract number 68-01-7347.

The site was initially discovered by the Illinois Environmental Protection Agency (IEPA). The site was discovered through a U.S. EPA Notification of Hazardous Waste Site (Form 103[c]) submitted by B. F. Goodrich to U.S. EPA. The site was evaluated in the form of a preliminary assessment (PA) that was submitted to U.S. EPA. The PA was prepared by Robert L. Munger of the IEPA Department of Land Pollution Control (DLPC), and is dated July 6, 1984.

FIT prepared an SSI work plan for the B. F. Goodrich site under technical directive document (TDD) F05-8703-374, issued on March 19, 1987. The SSI work plan was approved by U.S. EPA on August 2, 1988. The SSI of the B. F. Goodrich site was conducted on September 27, 1988, under TDD F05-8808-039, issued on September 1, 1988.

The FIT SSI included an interview with site representatives, a reconnaissance inspection of the site, and the collection of five sediment samples, one residential well sample, one municipal well sample, and three on-site well samples.

The purposes of an SSI have been stated by U.S. EPA in a directive outlining Pre-Remedial Program strategies. The directive states:

> All sites will receive a screening SI to 1) collect additional data beyond the PA to enable a more refined

> preliminary HRS [Hazard Ranking System] score, 2) establish priorities among sites most likely to qualify for the NPL [National Priorities List], and 3) identify the most critical data requirements for the listing SI step. A screening SI will not have rigorous data quality objectives (DQOs). Based on the refined preliminary HRS score and other technical judgement factors, the site will then either be designated as NFRAP [no further remedial action planned], or carried forward as an NPL listing candidate. A listing SI will not automatically be done on these sites, however. First, they will go through a management evaluation to determine whether they can be addressed by another authority such as RCRA [Resource Conservation and Recovery Act].... Sites that are designated NFRAP or deferred to other statutes are not candidates for a listing SI.
>
> The listing SI will address all the data requirements of the revised HRS using field screening and NPL level DQOs. It may also provide needed data in a format to support remedial investigation work plan development. Only sites that appear to score high enough for listing and that have not been deferred to another authority will receive a listing SI. (U.S. EPA 1988)

U.S. EPA Region V has also instructed FIT to identify sites during the SSI that may require removal action to remediate an immediate human health or environmental threat.

2. SITE BACKGROUND

2.1 INTRODUCTION

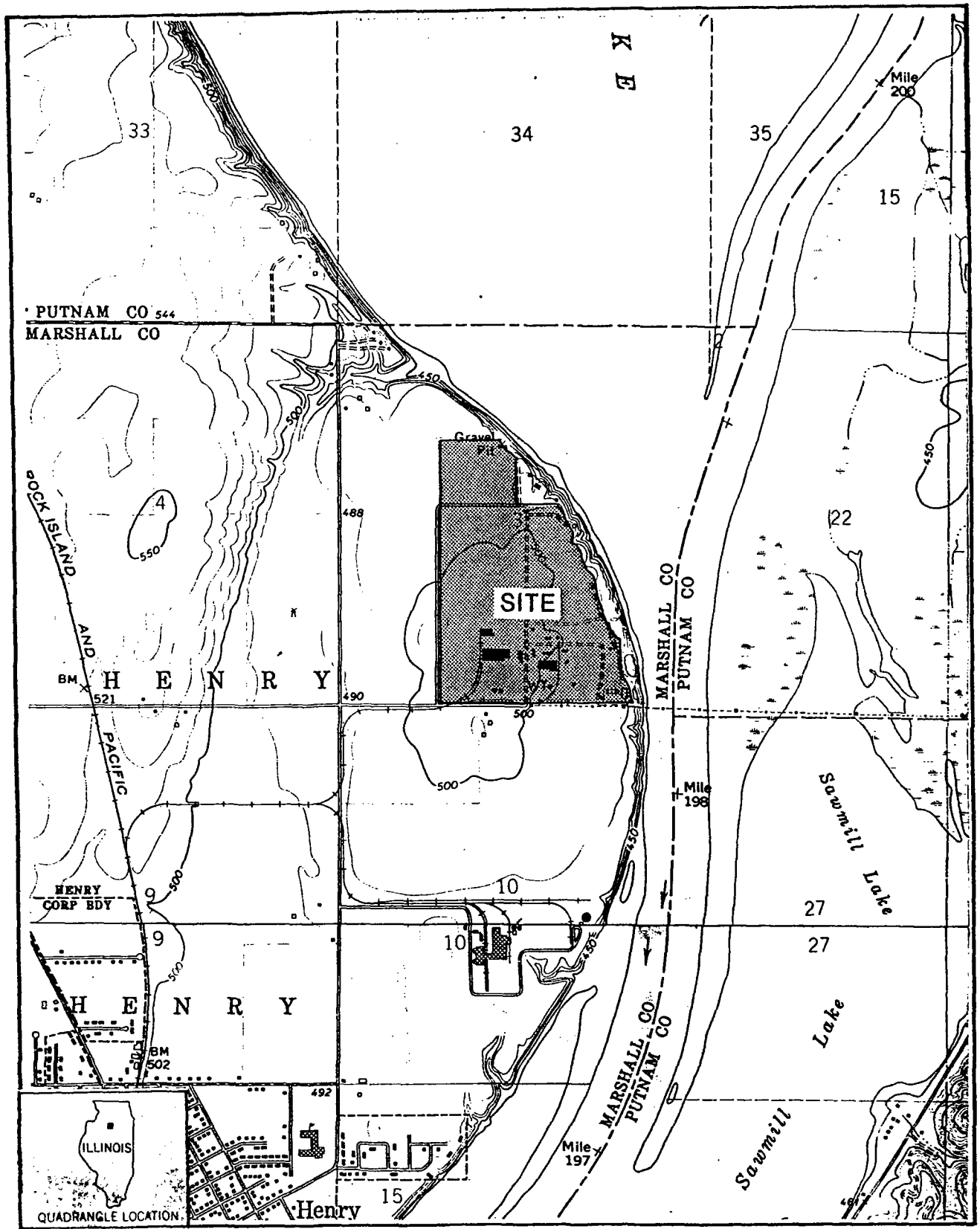
This section includes information obtained from SSI work plan preparation, the site representative interview, and a reconnaissance inspection of the site.

2.2 SITE DESCRIPTION

The B. F. Goodrich site is an active polyvinyl chloride (PVC) chemical manufacturing facility located on approximately 260 acres of land adjacent to the Illinois River in Marshall County, approximately 1 mile north of Henry, Illinois (S1/2 sec. 3, T.13N., R.10E.) (see Figure 2-1).

The site includes approximately 12 buildings used in processing PVC, and associated supply and transfer pipes located both above and below the ground surface and between the buildings and storage tanks. The storage tanks are of various sizes and shapes and are located throughout the completely fenced processing facility (see Figure 3-1). The fenced processing area is approximately 55 acres in area and extends from a southern entrance road north approximately 1,100 feet, and from the bank of the Illinois River west approximately 2,200 feet. On-site ponds and lagoons are inside the processing area and, according to file sketches and maps, B. F. Goodrich wells number 9 and number 10 are located approximately 300 feet west of the processing area and are separately fenced.

Potential contaminants used in the production of PVC at the B. F. Goodrich plant include biphenyl amines, acetone, benzene, phosphorus



SOURCE: Ecology and Environment, Inc. 1989; BASE MAP: USGS, Florid, IL Quadrangle, 7.5 Minute Series, 1972.

SCALE
0 0.5 1 MILE

FIGURE 2-1 SITE LOCATION

trichloride, chloroacetic acid, phenol, diamine, actonitrile, sulfuric acid, bleach, chlorine, and hydrochloric acid (IEPA 1976). Also noted in the operations are cyclohexane, butylamine, tetrahydrofuran, isopropanol solution, and iso-octane (IEPA 1985).

Wastes are loaded into 55-gallon drums in the plant. Storage dates are stenciled onto the drums and moved to a hazardous waste storage area in the northeastern corner of the processing area. The storage area consists of a concrete pad with a raised curb on three sides. The storage area is inspected daily for spills and inspection logs are kept (IEPA 1985a). A 4-mile radius map of the B. F. Goodrich site is provided in Appendix A.

2.3 SITE HISTORY

The site property has been owned and operated by B. F. Goodrich since 1958. According to IEPA, leaks and spills have occurred at the site, including the following.

- In 1966, a hole developed in the concrete liner to the PVC waste lagoon (IEPA 1984).

- In 1974, an unknown quantity of process waste from a polymer chemical process was discharged to the ground for seven hours; the waste contained 995 ppm chloride and .17 ppm phenols.

- In 1976, 1,000,000 gallons of cooling water containing 25 mg/L of chromate leaked from an underground pipe. A slight increase in chromium levels was recorded in the on-site process wells for three months following the leak before returning to safe levels (IEPA 1984).

- In 1978, solvents caused a failure in an underground sewer line. The extent of the subsequent discharge is unknown.

- In 1980, a leak in an interceptor pit, located near the center of the process facility, lasted for approximately one day, causing the discharge of 75,000 to 80,000 gallons of wastewater, containing 36 pounds di-isobutylene (DIB) and 5 pounds diphenylamine (see Figure 3-1).

- In 1983, a leak was detected in a sewer line leading from the process building to a waste treatment equalization basin. IEPA detected benzene, toluene, and xylene in the groundwater after the leak, but B. F. Goodrich is apparently not regulated under Resource Conservation and Recovery Act (RCRA) statutes because their wastes do not qualify under RCRA definitions of hazardous waste (IEPA 1984).

According to Ken Willings of B. F. Goodrich, three of the on-site ponds north of the process facility were closed in the 1970s, and final caps were installed on the ponds in 1987. These ponds had consisted mostly of PVC process wastes.

A landfill is located in the northern portion of the processing area, but was not observed by FIT. The landfill had accepted PVC process waste, but information regarding years of operation was not available in federal, state, and local file information reviewed by FIT or from the site representatives. Therefore, the exact location of the landfill is unknown. Currently, process wastes are drummed and shipped off-site. No treatment processes are conducted on-site except for biological treatment of the process wastewater.

The sludge wastes from the PVC process are shipped off-site by Peoria Disposal Company and Illinois Disposal Company to a landfill in Ottawa, Illinois. The companies responsible for removing liquid waste are Rollins of Deer Park, Texas; LWD of Calvert City, Kentucky; and Chemclear of Chicago, Illinois (Willings 1988). The process wastewater is biologically treated and then discharged into the Illinois River under National Pollutant Discharge Elimination System (NPDES) Permit number IL0001392. There have been complaints filed to IEPA concerning

air releases of a white powder; the powder was described as possible PVC residue by a B. F. Goodrich representative (IEPA 1976).

According to the site representatives, the only IEPA response activity at the site was a cleanup of a sulfuric acid spill in 1985 that involved the neutralization of contaminated soil. In situ physical treatment was conducted for neutralization of sulfuric acid.

IEPA was notified of leaks and spills at the site throughout B. F. Goodrich's operating history, but no regulatory-related responses have been documented.

3. SCREENING SITE INSPECTION PROCEDURES AND FIELD OBSERVATIONS

3.1 INTRODUCTION

This section outlines procedures and observations of the SSI of the B. F. Goodrich site. Individual subsections address the site representative interview, reconnaissance inspection, and sampling procedures. Rationales for specific FIT activities are also provided. The SSI was conducted in accordance with the U.S. EPA-approved work plan.

The U.S. EPA Potential Hazardous Waste Site Inspection Report (Form 2070-13) for the B. F. Goodrich site is provided in Appendix B.

3.2 SITE REPRESENTATIVE INTERVIEW

Kurt Sims, FIT Team Leader, conducted an interview with Ken Willings, Senior Environmental Engineer; Peter Piccinelli, Associate Engineer, both of B. F. Goodrich; and Greg Vanderlaan, Associate Engineer with G & M Consulting Engineers, Inc. (G & M Consulting Engineers, Inc., was hired by B. F. Goodrich). The interview was conducted on September 27, 1988, at 9:45 a.m. in the B. F. Goodrich plant office. Also present at the interview was Dan Sullivan, of FIT. The interview was conducted to gather information that would aid FIT in conducting SSI activities.

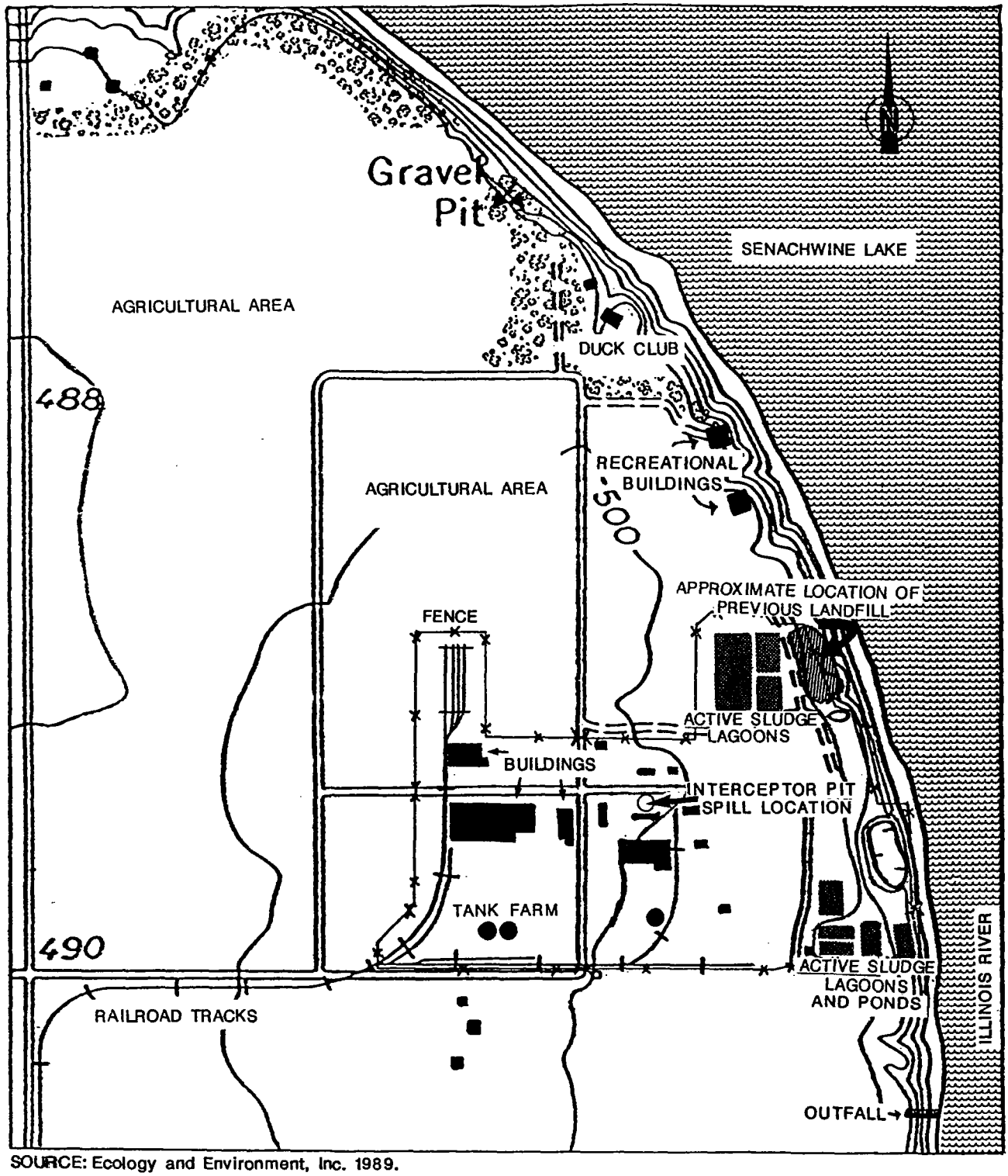
3.3 RECONNAISSANCE INSPECTION

On September 27, 1988, FIT conducted a reconnaissance inspection of the B. F. Goodrich site and surrounding area in accordance with Ecology and Environment, Inc. (E & E), health and safety guidelines. The reconnaissance inspection began at 11:00 a.m. The reconnaissance inspection

included a walk-through of sections of the site that were pertinent to the FIT SSI to determine appropriate health and safety requirements for conducting site activities and to make observations to aid in characterizing the site. FIT also determined exact sampling locations during the reconnaissance inspection. Site representatives accompanied FIT during the reconnaissance inspection and during subsequent sampling activities.

Reconnaissance Inspection Observations. The B. F. Goodrich site is situated on the outwash terrace of the Illinois River, approximately 60 feet above the normal pool level of the river (see Figure 3-1 for site features). The Illinois River bank forms the eastern boundary of the site. Sheet piling has been installed along the bank of the river sporadically along the B. F. Goodrich site property line to control erosion. The process facility portion of the site is approximately 56 acres in area and is completely enclosed by a fence with security gates. FIT observed process ponds and lagoons in the southeastern corner of the site that were also enclosed by the fencing. Chicago, Rock Island, and Pacific Railroad tracks are located at the southern boundary of the processing area. Access to the processing area by the railroad lines is controlled by electronic security gates. To the west of the site are agricultural fields. The main entrance to the processing area is located at the southern boundary of the site. Agricultural land owned by B. F. Goodrich forms part of the northwestern corner of the site boundary. The area directly north of the processing area consists of recreational areas for B. F. Goodrich employees. This area includes two buildings for indoor recreation and gatherings. Just north of this recreational area is a privately owned duck club. A caretaker is usually the only person at the club. The club property borders the Illinois River (Willings 1988).

The outwash terrace is a flat area. There are bluffs approximately 3 miles west of the site and across the Illinois River 1 1/2 miles east of the site, according to United States Geological Survey topographical maps of the area of the site (USGS 1972, 1972a). Many shallow backwater lakes are located along the Illinois River within a 4-mile radius of the site. Senachwine Lake is located approximately 1/4 mile north of the site. A trailer park is located approximately 1 mile west of the site. South and adjacent to the site is a farm and residence.



SOURCE: Ecology and Environment, Inc. 1989.

SCALE

0 700 1400 FEET

FIGURE 3-1 SITE FEATURES

The W. R. Grace Chemical Company operates a facility located 1/2 mile south of the site. The town of Henry is located approximately 1 1/2 miles south of the site. The nearest national wildlife refuge is 5 to 6 miles downstream and south of the site along the Illinois River.

The active process wastewater treatment pond was observed along the eastern boundary of the processing area alongside an inactive, empty lagoon. Effluent from the plant is discharged via an NPDES-permitted outfall sewer that runs south along the Illinois River for approximately 1,500 feet before making a 90 degree turn into the river. The outfall is located on the bank of the river and was observed during the FIT SSI. Photographs of the B. F. Goodrich site are provided in Appendix C.

3.4 SAMPLING PROCEDURES

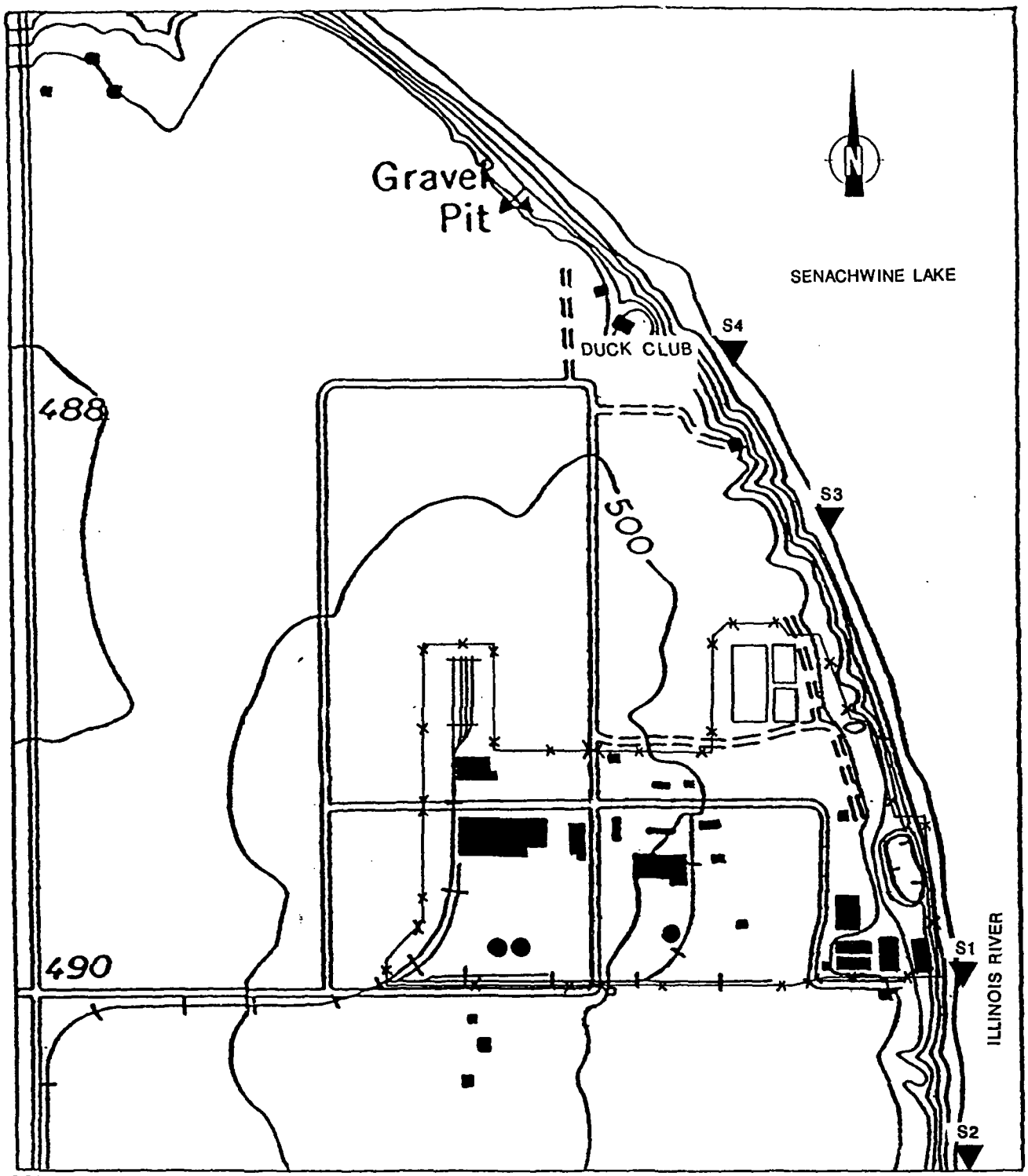
Samples were collected by FIT at locations determined during the reconnaissance inspection to determine levels of U.S. EPA Target Compound List (TCL) compounds and U.S. EPA Target Analyte List (TAL) analytes present at the site. The TCL and TAL, with corresponding quantitation/detection limits, are provided in Appendix D.

On September 27, 1988, FIT collected four sediment samples, one potential background sample, one residential well sample, one municipal well sample, three B. F. Goodrich well samples, and one duplicate well sample. FIT offered portions of all samples collected to the site representatives. The site representatives accepted the samples.

Sediment Sampling Procedures. Sediment sample S1 was collected from the western bank of the Illinois River at the southeastern corner of the site (see Figure 3-2 for sediment sampling locations). The sample was collected at the waterline of the river, and was chosen to determine whether runoff from the site had migrated to the river.

Sediment sample S2 was collected approximately 450 yards south of the location of sample S1. The location was also on the western bank of the Illinois River. The first 8 to 9 inches of small rounded gravel was removed before actual sediment was encountered and collected. This sample location was selected because of its downstream location to both the site and B. F. Goodrich's NPDES outfall.

Sediment sample S3 was also collected from the western bank of the Illinois River at the northern portion of the processing area. This



SOURCE: Ecology and Environment, Inc. 1989.

SCALE

0 700 1400 FEET

FIGURE 3-2 SEDIMENT SAMPLING LOCATIONS

location was chosen because of its proximity to previously used, but currently inactive, on-site sludge ponds and the possible location of the landfill.

Sediment sample S4 was collected from an area north of the location of sample S3 and approximately 50 to 100 feet south of the duck club pier on the western bank of the Illinois River. This location was chosen to determine the characteristics of the sediments north of the processing area, where Senachwine Lake is located. This area is part of a backwater flow between the lake and the Illinois River.

Sediment sample S5 was collected from the eastern bank of the Illinois River approximately 3 1/2 miles north and upstream of the site (see Figure 3-3). This upstream location was chosen to determine whether TCL compounds or TAL analytes were present in the river upstream of the site. Sediment sample S5 was collected as a potential background sediment sample.

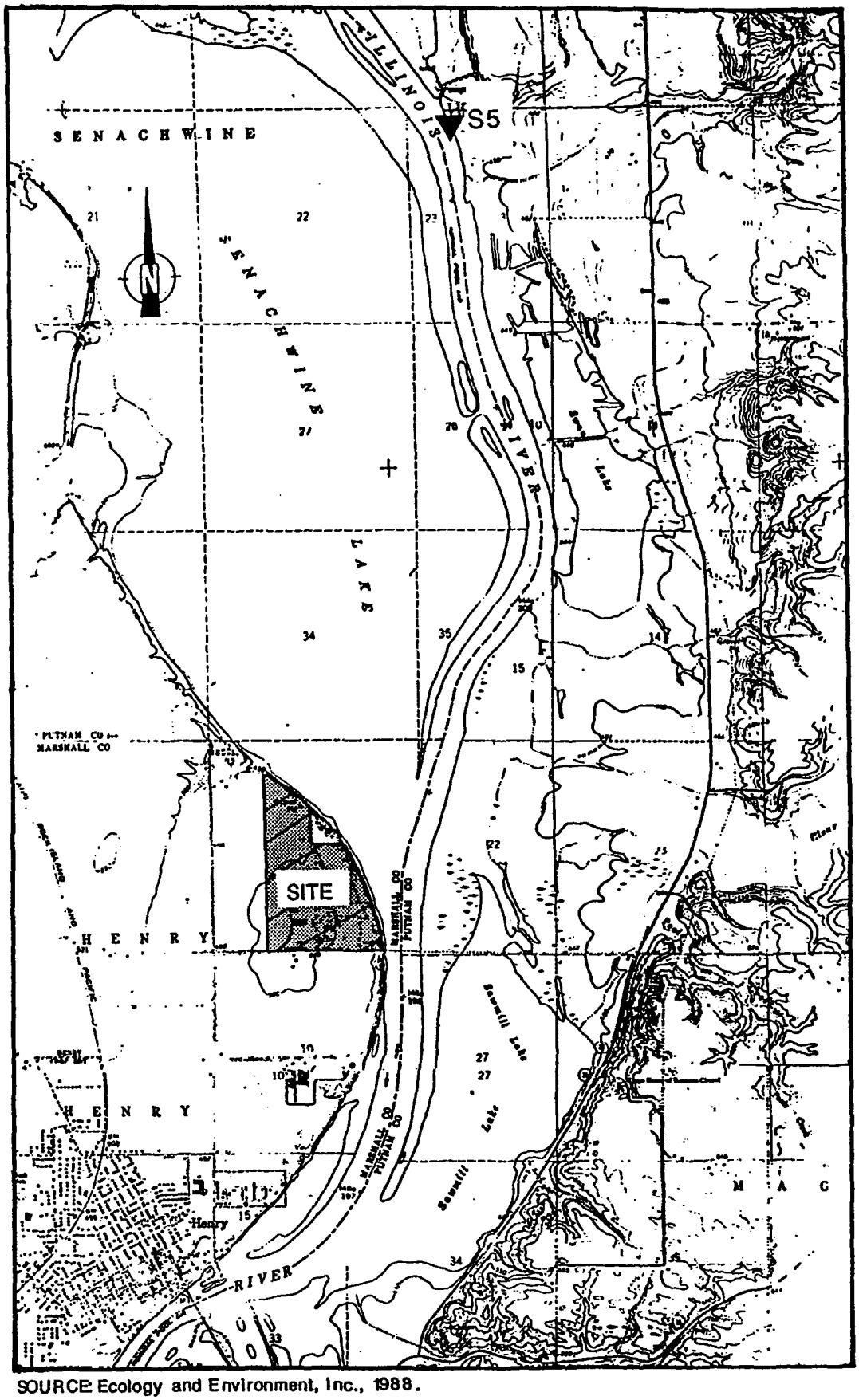
Sediment samples were collected along the Illinois River because of the close proximity of the river to the site, including lagoons and the landfill area. In addition, runoff from the site would eventually flow toward the river, which is normally 40 feet lower than the site terrain.

No soil samples were collected on-site because most of the site area was covered by pavement, partially buried pipes, buildings, and other processing structures.

A trowel was used to collect all the sediment samples and to transfer the sample material to a stainless steel bowl. Sample material was then transferred from the bowl to sample bottles using the trowels after sticks, rocks, roots, and other debris were removed.

Standard E & E decontamination procedures were adhered to during the collection of all sediment samples. The procedures included the scrubbing of all equipment (e.g., trowel and bowls) with a solution of detergent (Alconox) and distilled water, and triple-rinsing the equipment with distilled water before the collection of each sample. All sediment samples were packaged and shipped in accordance with U.S. EPA-required procedures.

As directed by U.S. EPA, all sediment samples were analyzed under the U.S. EPA Contract Laboratory Program (CLP) for TCL compounds by



SOURCE: Ecology and Environment, Inc., 1988.

SCALE
0 1 MILE

FIGURE 3-3 OFF-SITE SEDIMENT SAMPLING LOCATION

Aquatec, Inc., of South Burlington, Vermont, and for TAL analytes by Laucks Testing Labs, Inc., of Seattle, Washington.

Groundwater Sampling Procedures. Six groundwater samples (indicated as RW1, RW2, RW3, RW4, RW5, and RW6) were collected to determine whether TCL compounds or TAL analytes had migrated to groundwater from the site. The sampling locations were selected because of their proximity to the site (see Table 3-1 for addresses of off-site groundwater samples).

Sample RW1 was collected from B. F. Goodrich well number 10, located just west of the processing area (see Figure 3-4 for groundwater sampling locations and Table 3-2 for FIT-designated sampling nomenclature of B. F. Goodrich wells). The depth of well number 10 is approximately 105 feet, and is 8 inches in diameter (Willings 1988).

Sample RW2 was collected from B. F. Goodrich well number 2, which is also approximately 105 feet in depth (Willings 1988). This well is located on-site near the eastern boundary of the property.

Sample RW2 was collected from the closest outlet valve of B. F. Goodrich well number 2, located in building number 731, which is located in the approximate center of the processing area.

Sample RW3 was collected from B. F. Goodrich well number 3, which is located approximately 300 feet southeast of B. F. Goodrich well number 2. FIT collected the sample from the wellhead valve. A duplicate well sample (indicated as RW4) was collected at this location in accordance with U.S. EPA quality assurance/quality control (QA/QC) requirements.

Well logs were not available for the B. F. Goodrich wells that were sampled, but well logs of eight on-site test wells are provided in Appendix E.

Sample RW5 was collected from a residence located across an access road immediately south of the site. The sample was collected from an outside spigot. RW5 was the closest residential well to the site.

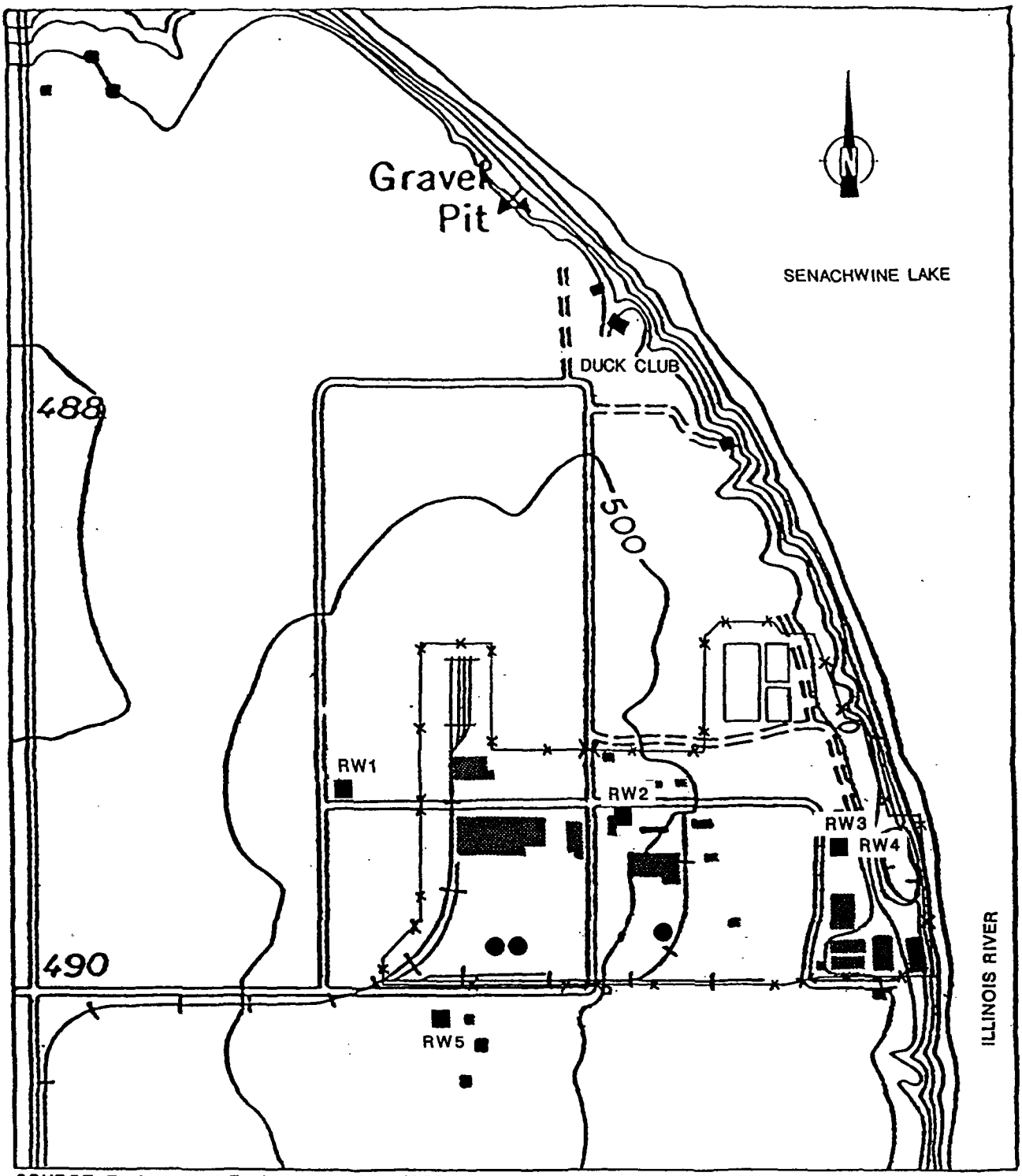
Sample RW6 was collected from the City of Henry's Municipal Waterworks well number 3, located approximately 1 1/2 miles south of the site (see Figure 3-5). The well is 12 inches in diameter and 62 feet in depth (Maubach 1988). The well and corresponding well house are located approximately 100 feet from the Illinois River in a city park (Maubach

Table 3-1

ADDRESSES OF OFF-SITE GROUNDWATER SAMPLING LOCATIONS

Sample	Address
RW5	Box 13, RR 1 Henry, IL 61537
RW6	Henry City Waterworks 426 E. Park Row Henry, IL 61537

Source: Ecology and Environment, Inc. 1989.



SOURCE: Ecology and Environment, Inc. 1989.

SCALE

0 700 1400 FEET

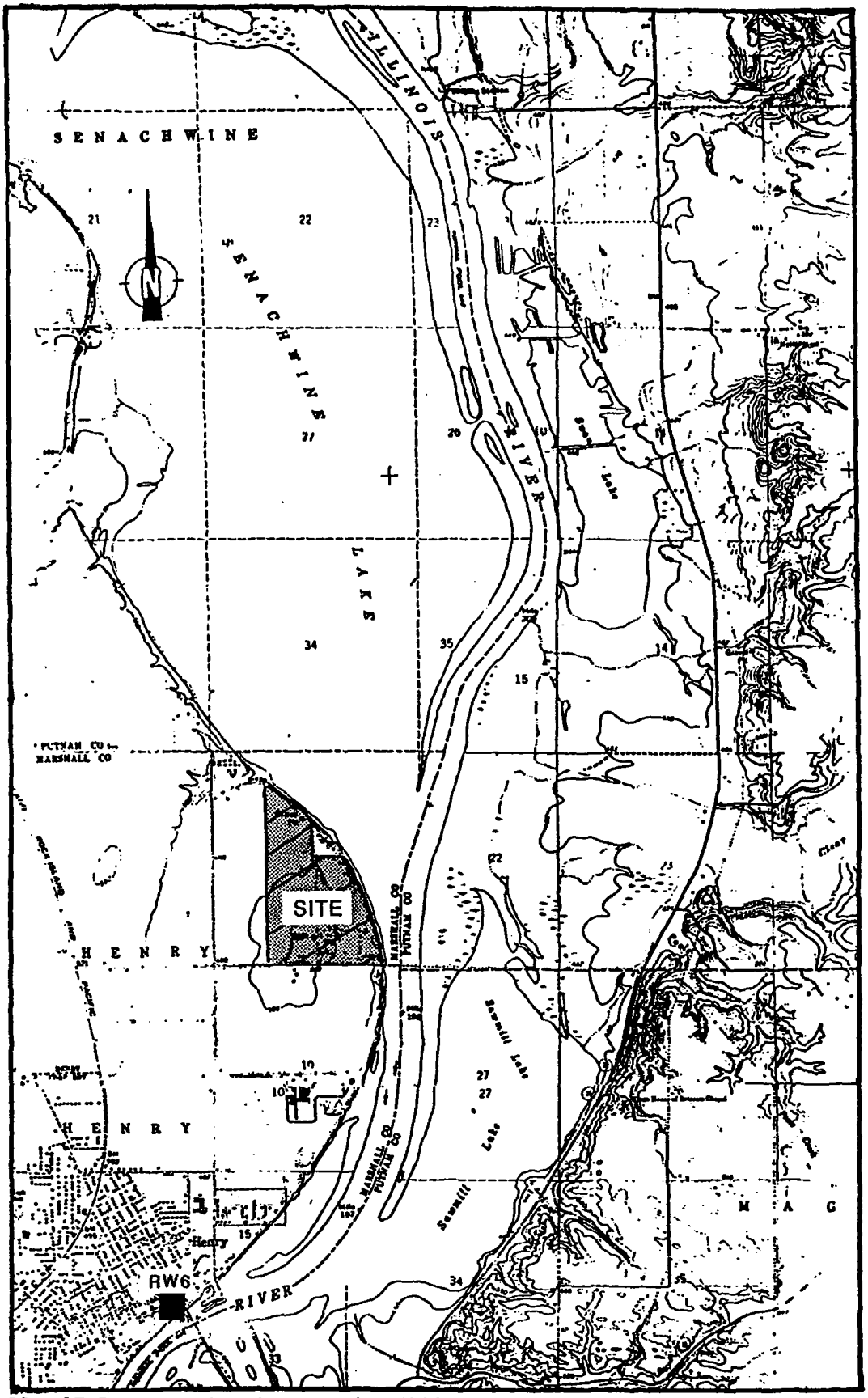
FIGURE 3-4 GROUNDWATER SAMPLING LOCATIONS

Table 3-2

CORRELATION OF FIT-DESIGNATED NOMENCLATURE TO B. F. GOODRICH WELL NUMBERS

FIT-Designated Nomenclature	B. F. Goodrich Well Number
RW1	10
RW2	2
RW3	3
RW4 (Duplicate)	3

Source: Ecology and Environment, Inc. 1989.



SOURCE: Ecology and Environment, Inc. 1989.

SCALE
0 1 MILE

FIGURE 3-5 OFF-SITE GROUNDWATER SAMPLING LOCATION

1988). The city of Henry owns and operates three other municipal wells. Well number 3 was chosen because of its shallow depth and proximity to the Illinois River.

All groundwater samples were obtained from outlets that bypassed water treatment systems and storage tanks. The water was allowed to discharge for approximately 15 minutes before samples were collected to insure that the sample sources had been purged of standing water. All well samples were packaged and shipped in accordance with U.S. EPA-required procedures.

As directed by U.S. EPA, all groundwater samples were analyzed by U.S. EPA CLP laboratories for TCL compounds by Environmental Sciences Engineering of Gainesville, Florida, and for TAL analytes by Nanco Laboratories, Inc., of Wappinger Falls, New York.

4. ANALYTICAL RESULTS

4.1 INTRODUCTION

This section presents results of the chemical analysis of FIT-collected sediment samples and groundwater samples for TCL compounds and TAL analytes.

4.2 RESULTS OF CHEMICAL ANALYSIS OF FIT-COLLECTED SAMPLES

Sediment Samples. Chemical analysis of FIT-collected sediment samples revealed substances from the following groups of TCL compounds and TAL analytes: halogenated hydrocarbons, phenols, polyaromatic hydrocarbons, aromatics, nitrogen hydrocarbons, heavy metals, common soil constituents, and common laboratory artifacts (see Table 4-1 for complete chemical analysis results of FIT-collected sediment samples).

Groundwater Samples. Chemical analysis of FIT-collected groundwater samples revealed substances from the following groups of TCL compounds and TAL analytes: halogenated hydrocarbons, ketones, nitrogen hydrocarbons, aromatics, halogenated aromatics, phenols, polychlorinated biphenyls (PCBs), metals, common laboratory artifacts, and common water constituents (see Table 4-2 for complete chemical analysis results of FIT-collected groundwater samples).

U.S. EPA quantitation/detection limits used in the analysis of sediment samples and groundwater samples are provided in Appendix D.

Table 4-1
RESULTS OF CHEMICAL ANALYSIS OF
FIT-COLLECTED SEDIMENT SAMPLES

Sample Collection Information and Parameters	Sample Number S1	S2	S3	S4	S5
Date	9/27/88	9/27/88	9/27/88	9/27/88	9/27/88
Time	1600	1535	1700	1715	1805
CLP Organic Traffic Report Number	EAY26	EAY27	EAY28	EAY29	EAY30
CLP Inorganic Traffic Report Number	MEAB46	MEAB47	MEAB48	MEAB49	MEAB50
Compound Detected (values in µg/kg)					
Volatile Organics					
chloroform	—	—	—	7J	—
Semivolatile Organics					
phenol	—	—	—	140J	97J
naphthalene	—	—	—	180J	180J
2-methylnaphthalene	—	—	—	—	180J
acenapthylene	—	—	—	760J	2,100
acenaphthene	—	—	—	130J	92J
dibenzofuran	—	—	—	110J	—
fluorene	—	—	—	500J	—
n-nitrosodiphenylamine	550J	1,900	1,100	450J	—
phenanthrene	190J	—	200J	4,700	880J
anthracene	—	—	72J	1,800	1,100
fluoranthene	220J	570J	680J	12,000	2,400
pyrene	210J	620J	680J	11,000	2,900
benzo[a]anthracene	100J	310J	420J	8,100	3,000
chrysene	98J	360J	410J	7,400	3,500
benzo[b]fluoranthene	—	240J	230J	6,300	3,800
benzo[k]fluoranthene	—	310J	190J	4,800	1,900
benzo[a]pyrene	—	330J	270J	7,300	3,900

Table 4-1 (Cont.)

Sample Collection Information and Parameters	Sample Number S1	S2	S3	S4	S5
benzo[g,h,i]perylene	--	330J	120J	3,600	2,600
indeno[1,2,3-cd]pyrene	--	320J	120J	3,700	2,400
dibenzo[a,h]anthracene	--	240J	--	1,900	1,300
Analyte Detected (values in mg/kg)					
aluminum	1,760J*	9,650J*	2,680J*	12,000J*	25,900J*
arsenic	2.9	6.1	9.4	3	23.5
barium	10.3B	73.8	14.3B	74.9	223
beryllium	--	.57B	--	--	.60B
cadmium	.59B	4	--	4.3	2.2
calcium	118,000J*	34,500J*	70,900J*	23,100J*	22,600J*
chromium	10.6	20.2	7.3	19.3	151
cobalt	3.1B	8B	3.5B	--	9.1B
copper	9.7	26.6	3.7B	26.5	204
iron	14,900JE*	123,000JE*	7,720JE*	14,900JE*	38,800JE*
lead	6.3JN*	18.1JN*	9.1JN*	50.8JN*	230JN*
magnesium	54,600J*	19,000J*	35,900J*	11,600J*	15,600J*
manganese	261JE	2,180JE	262JE	128JE	620JE
nickel	9.8	20.6	8.5	13.7	41
potassium	442B	1,550	555B	2,120	5,060
silver	--	--	--	--	2.5
sodium	155B	125B	235B	116B	304B
thallium	.28B	--	--	.52B	.64B
vanadium	9.6	61.5	10.7	29.6	50.9
zinc	51.1JN*	203JN*	45.1JN*	598JN*	699JN*

-- Not detected.

Table 4-1 (Cont.)

COMPOUND QUALIFIER	DEFINITION	INTERPRETATION
J	Indicates an estimated value.	Compound value may be semiquantitative.

ANALYTE QUALIFIERS	DEFINITION	INTERPRETATION
E	Estimated or not reported due to interference. See laboratory narrative.	Analyte or element was not detected, or value may be semiquantitative.
N	Spike recoveries outside QC protocols, which indicates a possible matrix problem. Data may be biased high or low. See spike results and laboratory narrative.	Value may be quantitative or semi-quantitative.
*	Duplicate value outside QC protocols which indicates a possible matrix problem.	Value may be quantitative or semi-quantitative.
B	Value is real, but is above instrument DL and below CRDL.	Value may be quantitative or semi-quantitative.
J	Value is above CRDL and is an estimated value because of a QC protocol.	Value may be semiquantitative.

Source: Ecology and Environment, Inc. 1989.

Table 4-2
RESULTS OF CHEMICAL ANALYSIS OF
FIT-COLLECTED GROUNDWATER SAMPLES

Sample Collection Information and Parameters	Sample Number RW1	RW2	RW3	RW4 Duplicate	RW5	RW6	Blank
Date	9/27/88	9/27/88	9/27/88	9/27/88	9/27/88	9/27/88	9/27/88
Time	1115	1140	1220	1220	1440	1320	1115
CLP Organic Traffic Report Number	EAY31	EAY32	EAY33	EAY34	EAY35	EAY36	EAY37
CLP Inorganic Traffic Report Number	MEAB51	MEAB52	MEAB53	MEAB54	MEAB55	MEAB56	MEAB57
Temperature (°C)	15	20	20	20	15	15	*
pH	6.55	6.65	6.90	6.90	6.94	6.74	*
Compound Detected (values in µg/L)							
Volatile Organics							
chloromethane	--	--	.9J	.8J	--	--	--
vinyl chloride	--	8	16J	13J	--	--	--
methylene chloride	--	--	1,900JEB	1,600JEB	5	--	--
acetone	--	--	100J	130J	--	--	--
carbon disulfide	--	--	1J	.8J	--	--	--
1,1-dichloroethene	--	.3	3J	.3J	--	--	--
1,1-dichloroethane	--	2	14J	15J	--	--	--
1,2-dichloroethene (total)	--	--	1J	1J	--	--	--
chloroform	--	.3	.9J	.8J	--	.5	.4
1,2-dichloroethane	--	.3J	--	--	--	.4	--
1,1,1-trichloroethane	--	3	8J	9J	--	.5	--
bromodichloromethane	--	--	--	--	--	.2	--
trichloroethene	--	2	3J	3J	--	--	--
1,1,2-trichloroethane	--	.4J	--	--	--	--	--
benzene	--	--	880JE	910JE	.3J	--	.2
4-methyl-2-pentanone	--	--	7J	10J	--	--	--
2-hexanone	--	23	570JE	640JE	--	--	--
tetrachloroethene	--	.4	.9J	.8J	--	--	--
toluene	--	--	580JE	570JE	.3J	--	1
chlorobenzene	--	--	7J	7J	--	--	--

Table 4-2 (Cont.)

Sample Collection Information and Parameters	Sample Number RW1	RW2	RW3	RW4 Duplicate	RW5	RW6	Blank
ethylbenzene	--	.2	3J	3J	--	--	--
xylenes (total)	--	2	47JE	45JE	--	--	.5
Semivolatile Organics							
phenol	--	--	51DB	91DB	--	--	--
benzylalcohol	--	--	8D	14D	--	--	1
2-methylphenol	--	--	31D	57D	--	--	--
4-methylphenol	--	--	15D	23D	--	--	--
naphthalene	--	--	4D	4D	--	--	--
n-nitrosodiphenylamine	--	62	110D	120D	--	--	--
Pesticides/PCBs							
Aroclor 1254	--	--	--	--	.075J	--	.67
Analyte Detected (values in µg/L)							
arsenic	--	--	17.5	13.5	--	--	--
barium	31B	41B	67B	64B	--	37B	--
calcium	78,500JN	88,800JN	76,800JN	75,400JN	88,800JN	84,900JN	--
copper	--	--	--	--	19B	--	--
iron	--	59JB	4,590	4,600	1,770	--	--
lead	1.2B	--	2.1B	2.1B	2B	--	--
magnesium	35,800	37,500	36,600	36,300	36,700	35,300	--
manganese	--	379	1,350	1,340	21	--	--
nickel	--	--	20B	21B	--	--	--
potassium	--	1,790B	2,580B	2,340B	--	4,050B	--
selenium	1B	--	--	1.3B	--	1.2B	--
silver	--	--	--	--	--	--	6B
sodium	4,490B	173,000	362,000	398,000	7,870	26,000	--
zinc	486JN	1,110JN	422JN	459JN	708JN	638JN	820JN

* These measurements were not taken by FIT.

-- Not detected.

Table 4-2 (Cont.)

COMPOUND QUALIFIERS	DEFINITION	INTERPRETATION
J	Indicates an estimated value.	Compound value may be semiquantitative.
B	This flag is used when the compound is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.	Compound value may be semiquantitative if it is <5x the blank concentration (<10x the blank concentrations for common laboratory artifacts: phthalates, methylene chloride, acetone, toluene, 2-butanone).
E	This flag identifies compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis. This flag will not apply to pesticides/PCBs analyzed by GC/EC methods.	Compound value may be semiquantitative. There should be another analysis with a D qualifier, which is to be used.
D	This flag identifies all compounds identified in an analysis at a secondary dilution factor.	Alerts data user to a possible change in the CRQL. Data is quantitative.

ANALYTE QUALIFIERS	DEFINITION	INTERPRETATION
N	Spike recoveries outside QC protocols, which indicates a possible matrix problem. Data may be biased high or low. See spike results and laboratory narrative.	Value may be quantitative or semiquantitative.
B	Value is real, but is above instrument DL and below CRDL.	Value may be quantitative or semiquantitative.
J	Value is above CRDL and is an estimated value because of a QC protocol.	Value may be semiquantitative.

Source: Ecology and Environment, Inc. 1989.

5. DISCUSSION OF MIGRATION PATHWAYS

5.1 INTRODUCTION

This section discusses data and information that apply to potential migration pathways and targets of TCL compounds and TAL analytes that are possibly attributable to the B. F. Goodrich site.

The five migration pathways discussed are: groundwater, surface water, air, fire and explosion, and direct contact.

5.2 GROUNDWATER

TCL compounds and TAL analytes were detected in groundwater within a 1/4-mile radius of the site. The presence of benzene, 2-hexanone, toluene, methylene chloride, and n-nitrosodiphenylamine in one of the on-site wells (RW3) constitutes an observed release to groundwater.

The geology at the site consists of approximately 100 feet of sand and gravel of Pleistocene age underlain by shaley bedrock of the Carbondale Formation of Pennsylvanian age. This bedrock is dense sedimentary rock that has a low permeability. The bedrock and the Pleistocene-age sand and gravel aquifer appear to be hydrologically connected and constitute a combined AOC.

The potential targets of groundwater contamination include an estimated 3,426 persons within a 4-mile radius of the site who obtain drinking water from municipal or private wells drawing from the AOC. This population was calculated by multiplying the number of homes located within a 4-mile radius of the site (255) from USGS topographic maps of the area of the site (USGS 1972, 1972a) by a persons-per-household value of 2.69 (U.S. Bureau of the Census 1982) and adding to this popu-

lation the population of Henry, Illinois (2,740) (U.S Bureau of the Census 1982).

Well logs indicate that all wells in the area are screened in the AOC and are 60 to 160 feet deep. (Well logs of the area of the site are provided in Appendix E.)

5.3 SURFACE WATER

Sediment samples were collected from the bank of the Illinois River upstream and downstream of the site. TCL compounds and TAL analytes were detected in these samples. However, attribution to the site is not conclusive because high levels of TCL compounds and TAL analytes were also detected in upstream sediment sample S5.

A potential exists for TCL compounds and TAL analytes detected at the site to reach the Illinois River via surface runoff. This potential is based on the following information.

- Spilled or leaked wastes may be present in on-site soils.
- Landfill wastes are in an undetermined physical state and, therefore, may leach.
- Liners and cover material at previously used waste areas are of an unknown thickness and consistency.
- The topography of the site slopes slightly toward the Illinois River.
- Waste treatment lagoons and inactive sludge ponds are located close to the river.

The Illinois River is not a source of drinking water within 4 miles downstream of the site. The river is used for recreational purposes along its entire length.

5.4 AIR

A release of potential contaminants to the air was not documented during the SSI of the B. F. Goodrich site. During the reconnaissance inspection, FIT site-entry instruments (HNu 101 and hydrogen cyanide detector) did not detect levels above background concentrations at the site. In accordance with the U.S. EPA-approved work plan, further air monitoring was not conducted by FIT.

In 1976, a complaint was filed by Bob Stadel, a neighboring resident to the site, concerning a white powder potentially released from the B. F. Goodrich plant. An investigation by IEPA determined that the material was most likely PVC residue (IEPA 1976).

A potential does exist for a release of TCL compounds and TAL analytes to the air because of the types of processes conducted on-site. B. F. Goodrich has been issued an air permit by IEPA (number 123803AAD).

Potential air contamination targets include approximately 3,426 persons within a 4-mile radius of the B. F. Goodrich site. This population was calculated in the same manner described in subsection 5.2.

5.5 FIRE AND EXPLOSION

The only reported incident of a fire or explosion at the site was an incident that occurred in the 1960s in a process building (Willings 1988). During the reconnaissance inspection, FIT site-entry instruments did not detect levels above background concentrations (E & E 1987).

5.6 DIRECT CONTACT

According to federal, state, and local file information reviewed by FIT, and interviews with site representatives, no documentation exists of an incident of direct contact with TCL compounds or TAL analytes at the B. F. Goodrich site.

Public access is restricted by 24-hour, 7-day-per-week security guards, and the processing area is completely fenced. Approximately 38 persons are located within a 1-mile radius of the site. This population was calculated in the same manner described in subsection 5.2.

6. BIBLIOGRAPHY

E & E, 1987, Quality Assurance Project Plan Region V FIT Conducted Site Inspections, Chicago, Illinois.

IEPA, May 7, 1976, Gary Patzlaff, interoffice memorandum, to Gary Melvin, regarding small blueish white beads collected from the Robert Stadel farm located adjacent to the B. F. Goodrich facility.

_____, July 9, 1984, R. L. Munger, interoffice memorandum, to R. A. Wengrow, regarding a chromate leak at the B. F. Goodrich site.

_____, November 26, 1985, RCRA Inspection Report for the B. F. Goodrich site, prepared by John Tripses, Environmental Protection Specialist, DLPC.

_____, January 31, 1985a, James E. Kammueller, interoffice memorandum, concerning a reconnaissance inspection of B. F. Goodrich Chemical Company.

Maubach, Tom, September 27, 1988, Henry City Waterworks Supervisor, interview regarding city well information, interviewed by Kurt Sims of E & E.

U.S. Bureau of the Census, 1982, 1980 General Population Characteristics: Illinois.

U.S. EPA, February 12, 1988, Office of Solid Waste and Emergency Response, Pre-Remedial Strategy for Implementing SARA, Directive number 9345.2-01, Washington, D.C.

USGS, 1972, Putnam, Illinois Quadrangle, 7.5 Minute Series: 1:24,000.

_____, 1972a, Florid, Illinois Quadrangle, 7.5 Minute Series: 1:24,000.

Willings, Ken, September 27, 1988, Senior Environmental Engineer, B. F. Goodrich, interview, conducted by Kurt Sims of E & E.

Woodward and Clyde Consultants, November, 1981, Report on Groundwater Monitoring Plan for the B. F. Goodrich Chemical Group Facility at Henry, Illinois.

2278:3

APPENDIX A

SITE 4-MILE RADIUS MAP

#6
#3
#4
#5
#1
#2
#7
NPDES OUTFALL
HENRY WATER DISTRICT LIMITS
HENRY MUNICIPAL WELL #3 SAMPLE RW6
SENACHWINE
SENACHWINE LAKE
HENRY
PUTNAM CO
MARSHALL CO
T32N
T31N
T30N
T14N
T13N
R9E
R10E
R2W
R1W
ILLINOIS RIVER
CHICAGO ROCK ISLAND PACIFIC RAILROAD
NORMAL POOL 440
Senachwine Lake
Sawmill Lake
Whitney Lake
Newhaven Lake
Billsbach Lake
Pumping Station
Gravel Pit
Cem
Henry Cemetery
St Patrick's Cem
Fairground
Trailer Park
Kings House of Retreats Chapel
Murphy Cem
Gaging Station
Creek
Lake
Mile 200
Mile 198
Mile 197
Mile 195
Mile 194
Mile 193

ecology and environment, inc.

SITE NAME B.F. GOODRICH CHEM. CO.

U.S. EPA ID# ILT180010324

USGS TOPOGRAPHIC MAPS:

NAME PUTNAM, IL.	NAME FLORID, IL	NAME
DATE 1972	DATE 1972	DATE
REVISED	REVISED	REVISED
NAME LACON, IL.	NAME HENRY, IL	NAME
DATE 1972	DATE 1972	DATE
REVISED	REVISED	REVISED

SCALE 0 ½ 1 MILE

ILLINOIS

QUADRANGLE LOCATION

APPENDIX B

U.S. EPA FORM 2070-13

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 1 - SITE LOCATION AND INSPECTION INFORMATION

EPA

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
IL	180010324

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER				
B.F. GOODRICH CHEMICAL CO.	R.R.#7 BOX 15				
03 CITY	**04 STATE**	**05 ZIP CODE**	**06 COUNTY**	**07 COUNTY CODE**	**08 CONG DIST**
HENRY	IL	61537	MARSHAL	123	17

09 COORDINATES LATITUDE 41 08 05.7 | LONGITUDE 089 20 21.1

10 TYPE OF OWNERSHIP (Check one)
■ A. PRIVATE ☐ B. FEDERAL _____ ☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL
☐ F. OTHER _____ ☐ G. UNKNOWN

III. INSPECTION INFORMATION

01 DATE OF INSPECTION	02 SITE STATUS	03 YEARS OF OPERATION
9 / 27 / 88 (MONTH DAY YEAR)	■ ACTIVE ☐ INACTIVE	1958 (BEGINNING YEAR) / PRESENT (ENDING YEAR) X UNKNOWN

04 AGENCY PERFORMING INSPECTION (Check all that apply)
☐ A. EPA ■ B. EPA CONTRACTOR ECOLOGY & ENVIRONMENT (Name of firm) ☐ C. MUNICIPAL ☐ D. MUNICIPAL CONTRACTOR _____ (Name of firm)
☐ E. STATE ☐ F. STATE CONTRACTOR _____ (Name of firm) ☐ G. OTHER _____ (Specify)

05 CHIEF INSPECTOR	06 TITLE	07 ORGANIZATION	08 TELEPHONE NO.
KURT SIMS	EARTH SCIENTIST	ECOLOGY & ENVIRONMENT	(312) 663-9415
09 OTHER INSPECTORS	**10 TITLE**	**11 ORGANIZATION**	**12 TELEPHONE NO.**
DAN SULLIVAN	CHEMICAL ENGINEER	ECOLOGY & ENVIRONMENT	(312) 663-9415
MELANIE NESTERENKO	BIOLOGIST	E & E	(312) 663-9415
RONNIE GALMORE	TECHNICIAN	E & E	(312) 663-9415
			( )
			( )

13 SITE REPRESENTATIVES INTERVIEWED	14 TITLE	15 ADDRESS	16 TELEPHONE NO
KEN WILLINGS	SR. ENVIRONMENTAL ENGINEER	R.R.1 BOX 15 HENRY, IL	(309) 364-9405
GREG VANDERLAAN	ENGINEERING CONSULTANT	75 E. WACKER DRIVE CHICAGO, IL.	(312) 263-6703
PETER PICCINELLI	ASSOC. ENGINEER	R.R.1 BOX 15 HENRY, IL	(309) 364-9408
			( )
			( )
			( )

17 ACCESS GAINED BY (Check one)	18 TIME OF INSPECTION	19 WEATHER CONDITIONS
■ PERMISSION ☐ WARRANT		

IV. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NO.
TOM CRAUSE	ILLINOIS EPA	(217) 782-9848

04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NO.	08 DATE
KURT SIMS	FIT	ECOLOGY & ENVIRONMENT	312/663-9415	01 / 20 / 89 (MONTH DAY YEAR)

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION
01 STATE: LT | 02 SITE NUMBER: 180010324

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)
- [■] A. SOLID
- [□] B. POWDER, FINES
- [■] C. SLUDGE
- [□] D. OTHER (Specify)
- [□] E. SLURRY
- [■] F. LIQUID
- [□] G. GAS

02 WASTE QUANTITY AT SITE (Measures of waste quantities must be independent)
- TONS: ____
- CUBIC YARDS: UNK
- NO. OF DRUMS: ____

03 WASTE CHARACTERISTICS (Check all that apply)
- [■] A. TOXIC
- [□] B. CORROSIVE
- [□] C. RADIOACTIVE
- [■] D. PERSISTENT
- [■] E. SOLUBLE
- [□] F. INFECTIOUS
- [■] G. FLAMMABLE
- [□] H. IGNITABLE
- [□] I. HIGHLY VOLATILE
- [□] J. EXPLOSIVE
- [□] K. REACTIVE
- [□] L. INCOMPATIBLE
- [□] M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE	UNK		WASTEWATER SLUDGE
OLW	OILY WASTE			
SOL	SOLVENTS			
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS	UNK		LANDFILL ON-SITE MAY CONTAIN HEAVY METALS
BAS	BASES			
MES	HEAVY METALS	UNK		

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
SOL	CHLOROFORM	67-66-3	S4	7 J	mg/Kg
OCC	PHENOL	108-95-2	S4	140 J	mg/Kg
OCC	NAPHTHALENE	91-20-3	S4	180 J	mg/Kg
OCC	2-METHYLNAPHTHALENE	91-57-6	S5	180 J	mg/Kg
OCC	ACENAPHTHYLENE	208-96-8	S5	2100	mg/Kg
OCC	DIBENZOFURAN	132-64-9	S4	110 J	mg/Kg
OCC	N-NITROSODIPHENYLAMINE	86-30-6	S2	1900	mg/Kg
OCC	PHENANTHRENE	85-01-8	S4	4700	mg/Kg
OCC	ANTHRACENE	120-12-7	S4	1800	mg/Kg
OCC	FLUORANTHENE	206-44-0	S4	12000	mg/Kg
OCC	PYRENE	129-00-0	S4	11000	mg/Kg
OCC	BENZO(a)ANTHRACENE	56-55-3	S4	8100	mg/Kg
OCC	CHRYSENE	218-01-9	S4	7400	mg/Kg
OCC	DIBENZO[a,h]ANTHRACENE	53-70-3	S4	1900	mg/Kg
OCC	BENZO(a)PYRENE	50-32-8	S4	7300	mg/Kg
OCC	BENZO[g,h,i]PERYLENE	191-24-2	S4	3600	mg/Kg

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS	NA		FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

- ECOLOGY & ENVIRONMENT FILES, FIT, REGION X
- SITE REPRESENTATIVE INTERVIEW BY FIT ON 9-27-88
- SAMPLE ANALYSIS DATA FOR SAMPLES COLLECTED BY FIT ON 9-27-88

* Continued from Part II, Section IV.

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
MES	ARSENIC	7440-38-2	/SS	23.5	mg/Kg
MES	BARIUM	7440-39-3	/SS	223	mg/Kg
MES	CADMIUM	7440-43-9	/S4	4.3	mg/Kg
MES	CHROMIUM	7440-47-3	/SS	151	mg/Kg
MES	COPPER	7440-50-8	/SS	204	mg/Kg
MES	LEAD	7439-92-1	/SS	230 JN*	mg/Kg
MES	NICKEL	7440-02-0	/SS	41	mg/Kg
MES	VANADIUM	7440-62-2	/S2	61.5	mg/Kg
SOL	CARBON DISULFIDE	75-15-0	/RW3	1 J	ug/L
SOL	1,1-DICHLOROETHANE	75-34-3	/RW4	15 J	ug/L
SOL	1,1,1-TRICHLOROETHANE	71-55-6	/RW4	9 J	ug/L
SOL	TRICHLOROETHENE	79-01-6	/RW3	3 J	ug/L
SOL	TETRACHLOROETHENE	127-18-4	/RW3	0.9 J	ug/L
OCC	2-METHYLPHENOL	95-48-7	/RW4	57 D	ug/L

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE: ILT | 02 SITE NUMBER: 1800103 24

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ■ A. GROUNDWATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED: 3426
02 ■ OBSERVED (DATE: 9-27-88) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
TAL ANALYTES AND TCL COMPOUNDS HAVE BEEN DETECTED IN WELLS SAMPLED AT THE B.F.GOODRICH SITE. TRACE AMOUNTS HAVE ALSO BEEN DETECTED IN NEARBY RESIDENTIAL AND MUNICIPAL WELLS. THE POTENTIAL OF MIGRATION TO OFF-SITE WELLS IS LOW DUE TO GROUNDWATER FLOW DIRECTION

01 ■ B. SURFACE WATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED: ~3000
02 ■ OBSERVED (DATE: 9-27-88) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
SEDIMENT SAMPLES COLLECTED ALONG THE ILLINOIS RIVER INDICATE SIMILAR OR GREATER LEVELS OF CONTAMINANTS IN UPSTREAM SEDIMENTS, ATTRIBUTION TO THE SITE IS UNCERTAIN DUE TO SAMPLES INDICATING CHEMICALS NOT ASSOCIATED WITH SITE OPERATIONS.

01 ■ C. CONTAMINATION OF AIR
03 POPULATION POTENTIALLY AFFECTED: ~3000
02 ☐ OBSERVED (DATE: _____) ■ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
ALL AIR PERMITS ARE ISSUED AND MONITORED BY THE STATE OF ILLINOIS. NO DATA AVAILABLE CONCERNING VIOLATIONS. A COMPLAINT WAS ISSUED CONCERNING A POSSIBLE RELEASE TO AIR IN 1976 OF PVC RESIDUE.

01 ■ D. FIRE/EXPLOSIVE CONDITIONS
03 POPULATION POTENTIALLY AFFECTED: ~100
02 ☐ OBSERVED (DATE: _____) ■ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
AS A CHEMICAL MANUFACTURER, CHEMICALS OF FLAMMABLE/EXPLOSIVE NATURE ARE PRESENT ON-SITE. THE PLANT HAS MANY SAFEGUARDS, ALARMS AND SAFETY PLANS. INSTRUMENTS USED BY FIT DURING INSPECTION DID NOT INDICATE UNSAFE CONDITIONS.

01 ■ E. DIRECT CONTACT
03 POPULATION POTENTIALLY AFFECTED: ~100
02 ☐ OBSERVED (DATE: _____) ■ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
THE POTENTIAL TO COME IN CONTACT IS LOW DUE TO THE HIGH SECURITY LEVELS AT THE SITE ALTHOUGH SAMPLES COLLECTED ALONG THE RIVER INDICATE THE PRESENCE OF TCL COMPOUNDS AND TAL ANALYTES.

01 ■ F. CONTAMINATION OF SOIL
03 AREA POTENTIALLY AFFECTED: ~260 (Acres)
02 OBSERVED (DATE: _____) ■ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
SEDIMENT SAMPLES INDICATE THE PRESENCE OF CONTAMINANTS NEAR THE SITE AND GROUND WATER SAMPLES ON-SITE ALSO INDICATE THE PRESENCE OF TCL COMPOUNDS AND TAL ANALYTES AT THE SITE.

01 ■ G. DRINKING WATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED: 3426
02 ☐ OBSERVED (DATE: _____) ■ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION ALTHOUGH THE POTENTIAL IS LOW, OFF-SITE DRINKING WATER WELLS COULD BECOME CONTAMINATED SINCE MOST ARE SHALLOW IN SANDY LOAMS. SPILLS HAVE OCCURRED IN THE PAST. GROUNDWATER FLOW IS GENERALLY TOWARD THE ILLINOIS RIVER ADJACENT THE SITE, AWAY FROM WELLS.

01 ■ H. WORKER EXPOSURE/INJURY
03 WORKERS POTENTIALLY AFFECTED: ~100
02 ☐ OBSERVED (DATE: _____) ■ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
ALTHOUGH SAFETY IS DOMINANT AT THE SITE, THE POTENTIAL FOR EXPOSURE EXISTS DUE TO THE AMOUNTS OF WASTES PRODUCED. SAFETY PLANS AND ALARMS ARE STRICTLY MAINTAINED BY B.F.GOODRICH ON-SITE.

01 ■ I. POPULATION EXPOSURE/INJURY
03 POPULATION POTENTIALLY AFFECTED: ~40
02 ☐ OBSERVED (DATE: _____) ■ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
THE POPULATION WITHIN ONE MILE OF THE SITE IS LOW AND SECURITY AND SAFETY IS HIGH AT THE SITE, BUT THE POTENTIAL FOR EXPOSURE EXISTS.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION
01 STATE: ILT | 02 SITE NUMBER: 180010324

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ■ J. DAMAGE TO FLORA — 02 ☐ OBSERVED (DATE: _____) ■ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
THE POTENTIAL FOR THE AGRICULTURAL FIELDS SURROUNDING THE SITE TO BE EXPOSED TO SURFACE RUNOFF OR AIR RELEASE DOES EXIST ALTHOUGH NO RECORDED INCIDENTS ARE NOTED.

01 ■ K. DAMAGE TO FAUNA — 02 ☐ OBSERVED (DATE: _____) ■ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION (Include name(s) of species)
RUNOFF FROM THE SITE COULD POTENTIALLY AFFECT FISH AND WILDLIFE THAT INHABIT THE BANKS OF THE ILLINOIS RIVER.

01 ■ L. CONTAMINATION OF FOOD CHAIN — 02 ☐ OBSERVED (DATE: _____) ■ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
RUNOFF AND SURFACE SOIL CONTAMINANTS MAY BE TRANSMITTED INTO THE FOOD CHAIN THROUGH FISH AND SMALL MAMMALS.

01 ■ M. UNSTABLE CONTAINMENT OF WASTES (Spills/Runoff/Standing liquids, Leaking drums) — 02 ☐ OBSERVED (DATE: _____) ■ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 3426
04 NARRATIVE DESCRIPTION
PAST LEAKS AND SPILLS INDICATE A POTENTIAL FOR WASTE RELEASE.

01 ■ N. DAMAGE TO OFFSITE PROPERTY — 02 ☐ OBSERVED (DATE: _____) ■ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
SOIL SAMPLES COLLECTED BY FIT INDICATE THE POTENTIAL OF OFF-SITE MIGRATION.

01 O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
THE PLANT AND SITE ARE NOT CONNECTED TO ANY OUTSIDE DRAIN SYSTEM.

01 ■ P. ILLEGAL/UNAUTHORIZED DUMPING — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
NONE REPORTED. 24-HOUR SECURITY ELIMINATES THE POTENTIAL.

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS
SITE RUNOFF FLOWS INTO THE ILLINOIS RIVER.

III. TOTAL POPULATION POTENTIALLY AFFECTED: 3426

IV. COMMENTS
NUMEROUS LEAKS AND SPILLS AT THE PROCESS FACILITY HAVE OCCURRED. SEE SECTION 2.3 IN NARRATIVE LISTS SPECIFICS.

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)
- E & E FILES Reg V.
- IEPA FILE INFORMATION
- SITE REPRESENTATIVE INTERVIEW ON 9-27-88 BY FIT.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION
PART 4 - PERMIT AND DESCRIPTIVE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
ILT	1800103 24

II. PERMIT INFORMATION

01 TYPE OF PERMIT ISSUED (Check all that apply)	02 PERMIT NUMBER	03 DATE ISSUED	04 EXPIRATION DATE	05 COMMENTS
■ A. NPDES	IL000 1392	UNK	UNK	DISCHARGE TO ILLINOIS RIVER
☐ B. UIC				
■ C. AIR STATE	123803AAD	UNK	UNK	
■ D. RCRA	ILT1800103 24	UNK	UNK	
☐ E. RCRA INTERIM STATUS				
☐ F. SPCC PLAN				
■ G. STATE (Specify) WASTE	1238030010	UNK	UNK	
☐ H. LOCAL (Specify)				
☐ I. OTHER (Specify)				
☐ J. NONE				

III. SITE DESCRIPTION

01 STORAGE/DISPOSAL (Check all that apply)	02 AMOUNT	03 UNIT OF MEASURE
■ A. SURFACE IMPOUNDMENT	UNK	
☐ B. PILES		
☐ C. DRUMS, ABOVE GROUND		
■ D. TANK, ABOVE GROUND	UNK	
☐ E. TANK, BELOW GROUND		
■ F. LANDFILL	UNK	
☐ G. LANDFARM		
☐ H. OPEN DUMP		
☐ I. OTHER (Specify)		

04 TREATMENT (Check all that apply)

- ☐ A. INCENERATION
- ☐ B. UNDERGROUND INJECTION
- ☐ C. CHEMICAL/PHYSICAL
- ■ D. BIOLOGICAL
- ☐ E. WASTE OIL PROCESSING
- ☐ F. SOLVENT RECOVERY
- ☐ G. OTHER RECYCLING/RECOVERY
- ☐ H. OTHER (Specify)

05 OTHER

- ■ A. BUILDINGS ON SITE: 10

06 AREA OF SITE

~ 260 (Acres)

07 COMMENTS

SITE GENERATED WASTE IS CURRENTLY INCINERATED OR RECLAIMED BOTH ON-SITE AND OFF-SITE BY VARIOUS CONTRACTORS. 3 OF THE 5 WASTE PONDS HAVE BEEN CAPPED AND REMAIN UNUSED. 1 POND IS USED FOR WASTEWATER TREATMENT AND 1 POND HAS WATER IN IT. AN OLD LANDFILL OF PVC WASTE IS AT THE NORTHEAST CORNER OF THE SITE.

IV. CONTAINMENT

01 CONTAINMENT OF WASTES (Check one)

☐ A. ADEQUATE, SECURE ■ B. MODERATE ☐ C. INADEQUATE, POOR ☐ D. INSECURE, UNSOUND, DANGEROUS

02 DESCRIPTION OF DRUMS, DIKING, LINERS, BARRIERS, ETC.

PONDS ARE CLAY LINED. CONDITION OF THE LANDFILL IS UNKNOWN. LEAKS AND SPILLS HAVE OCCURRED ON-SITE. CLEANUP AND TREATMENT TOOK PLACE ON ONE LEAK BUT OTHER RESPONSES AND CONDITIONS ON-SITE ARE UNKNOWN.

V. ACCESSIBILITY

01 WASTE EASILY ACCESSIBLE: ☐ YES ■ NO

02 COMMENTS

24-HOUR SECURITY AND COMPLETE FENCED-IN SITE MAKES UNAUTHORIZED ACCESS IMPROBABLE.

VI. SOURCES OF INFORMATION (Cite specific references, e.g. state files, sample analysis, reports)

- E & E FILES, Reg. V, CHICAGO
- SITE REPRESENTATIVE INTERVIEW.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION
01 STATE: ILT | 02 SITE NUMBER: 180010324

II. DRINKING WATER SUPPLY

01 TYPE OF DRINKING SUPPLY (Check as applicable)

	SURFACE	WELL
COMMUNITY	A. ☐	B. ■
NON-COMMUNITY	C. ☐	D. ■

02 STATUS

ENDANGERED	AFFECTED	MONITORED
A. ☐	B. ☐	C. ■
D. ☐	E. ☐	F. ☐

03 DISTANCE TO SITE
A. ~2 (mi)
B. ~200 FT.

III. GROUNDWATER

01 GROUNDWATER USE IN VICINITY (Check one)
■ A. ONLY SOURCE FOR DRINKING ☐ B. DRINKING (Other sources available) ☐ C. COMMERCIAL, INDUSTRIAL, IRRIGATION (Limited other sources available) ☐ D. NOT USED, UNUSEABLE
COMMERCIAL, INDUSTRIAL, IRRIGATION (No other water sources available)

02 POPULATION SERVED BY GROUND WATER: 3426
03 DISTANCE TO NEAREST DRINKING WATER WELL: ~200 FT

04 DEPTH TO GROUNDWATER	05 DIRECTION OF GROUNDWATER FLOW	06 DEPTH TO AQUIFER OF CONCERN	07 POTENTIAL YIELD OF AQUIFER	08 SOLE SOURCE AQUIFER
~50 (ft)	EAST	10-50 (ft)	700 GPM	☐ YES ■ NO

09 DESCRIPTION OF WELLS (Including useage, depth, and location relative to population and buildings)
GROUNDWATER IN THE AREA IS USUALLY OBTAINED FROM PERMEABLE SAND AND GRAVEL FORMATIONS CONTAINED IN THE LOWER PART OF THE PARTIALLY BURIED BEDROCK VALLEYS PRESENT ALONG THE ILLINOIS RIVER IN THIS AREA. WELLS GENERALLY RANGE IN DEPTH FROM ABOUT 65 TO 110 FEET. A DENSE SHALY BEDROCK UNDERLIES THE OUTWASH AT ~100 FT. DEPTH.

10 RECHARGE AREA
■ YES ☐ NO
COMMENTS: RECHARGE VIA PRECIPITATION

11 DISCHARGE AREA
■ YES ☐ NO
COMMENTS: THE ILLINOIS RIVER IS NORMALLY AT OR BELOW THE GROUNDWATER LEVEL.

IV. SURFACE WATER

01 SURFACE WATER USE (Check one)
■ A. RESERVOIR, RECREATION, DRINKING WATER SOURCE ☐ B. IRRIGATION, ECONOMICALLY IMPORTANT RESOURCES ☐ C. COMMERCIAL, INDUSTRIAL ☐ D. NOT CURRENTLY USED

02 AFFECTED/POTENTIALLY AFFECTED BODIES OF WATER

NAME:	AFFECTED	DISTANCE TO SITE
ILLINOIS RIVER	☐	~200 FT.
SENACHWINE LAKE	☐	0.25 (mi)
SAWMILL LAKE	☐	0.50 (mi)

V. DEMOGRAPHIC AND PROPERTY INFORMATION

01 TOTAL POPULATION WITHIN

ONE (1) MILE OF SITE	TWO (2) MILES OF SITE	THREE (3) MILES OF SITE
A. 38 NO. OF PERSONS	B. 2334 NO. OF PERSONS	C. 3168 NO. OF PERSONS

02 DISTANCE TO NEAREST POPULATION: ~400 FT.

03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE: 868

04 DISTANCE TO NEAREST OFF-SITE BUILDING: ~400 FT.

05 POPULATION WITHIN VICINITY OF SITE (Provide narrative description of nature of population within vicinity of site, e.g., rural, village, densely populated urban area)
SITE IS IN A SPARCELY POPULATED RURAL AGRICULTURAL AREA EXCEPT FOR THE TOWN OF HENRY LOCATED APPROXIMATELY 1-MILE SOUTH OF THE SITE. THE ILLINOIS RIVER AND RELATED SHALLOW BACKWATER LAKES COVER A LARGE PORTION OF THE 4-MILE RADIUS.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 STATE: ILT | 02 SITE NUMBER: 180010324

VI. ENVIRONMENTAL INFORMATION

01 PERMEABILITY OF UNSATURATED ZONE (Check one)

☐ A. $10^{-6} - 10^{-8}$ cm/sec ☐ B. $10^{-4} - 10^{-6}$ cm/sec ■ C. $10^{-4} - 10^{-3}$ cm/sec ☐ D. GREATER THAN 10^{-3} cm/sec

02 PERMEABILITY OF BEDROCK (Check one)

☐ A. IMPERMEABLE (Less than 10^{-6} cm/sec) ■ B. RELATIVELY IMPERMEABLE ($10^{-4} - 10^{-6}$ cm/sec) ☐ C. RELATIVELY PERMEABLE ($10^{-2} - 10^{-4}$ cm/sec) ☐ D. VERY PERMEABLE (Greater than 10^{-2} cm/sec)

03 DEPTH TO BEDROCK	04 DEPTH OF CONTAMINATED SOIL ZONE	05 SOIL pH	
~100 (ft)	UNK (ft)	UNK	

06 NET PRECIPITATION	07 ONE YEAR 24 HOUR RAINFALL	08 SLOPE: SITE SLOPE	DIRECTION OF SITE SLOPE	TERRAIN AVERAGE SLOPE
35-33=2 (in)	2.5 (in)	0-3 %	E	0-3 %

09 FLOOD POTENTIAL

SITE IS IN NA YEAR FLOODPLAIN

10 NA

☐ SITE IS ON BARRIER ISLAND, COASTAL HIGH HAZARD AREA, RIVERINE FLOODWAY

11 DISTANCE TO WETLANDS (5 acre minimum)

ESTUARINE: A. NA (mi) OTHER: B. 0.25 (mi)

12 DISTANCE TO CRITICAL HABITAT (of endangered species)

>3 (mi)

ENDANGERED SPECIES: NA

13 LAND USE IN VICINITY

DISTANCE TO:

COMMERCIAL/INDUSTRIAL	RESIDENTIAL AREAS; NATIONAL/STATE PARKS, FORESTS, OR WILDLIFE RESERVES	AGRICULTURAL LANDS: PRIME AG LAND	AG LAND
A. ~0.5 (mi)	B. ~200 FT.	C. >3 (mi)	D. ADJACENT

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

SEE APPENDIX A

VII. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

- E & E FILES; Reg. V.

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 6 - SAMPLE AND FIELD INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
ILT	1800103 24

II. SAMPLES TAKEN

SAMPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO	03 ESTIMATED DATE RESULTS AVAILABLE
GROUNDWATER	7	TCL COMPOUNDS - ESE, GAINESVILLE, FL. TAL ANALYTES - NANCO LABS, WAPPINGER FALLS, NY	NOV. 1988
SURFACE WATER			
WASTE			
AIR			
RUNOFF			
SPILL			
~~SOIL~~ / SEDIMENT	5	TCL COMPOUNDS - AQUATEC, S. BURLINGTON, VT. TAL ANALYTES - LAUCKS LABS, SEATTLE, WA.	NOV. 1988
VEGETATION			
OTHER			

III. FIELD MEASUREMENTS TAKEN

01 TYPE	02 COMMENTS
HNU 10 (10.2)	NO READINGS ABOVE BACKGROUND
CN MONOTOX	NO READINGS ABOVE BACKGROUND
O2 / EXPLOSIMETER	NO READINGS ABOVE OR BELOW BACKGROUND
RAD-MINI	NO READINGS ABOVE BACKGROUND

IV. PHOTOGRAPHS AND MAPS

01 TYPE ■ GROUND ☐ AERIAL

02 IN CUSTODY OF ECOLOGY & ENVIRONMENT, INC., CHICAGO
(Name of organization or individual)

03 MAPS ■ YES ☐ NO

04 LOCATION OF MAPS E & E FILES, REGION V, CHICAGO

V. OTHER FIELD DATA COLLECTED (Provide narrative description)

NONE

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

- E & E FILES, Reg V.

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 7 - OWNER INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
ILT	180010324

II. CURRENT OWNER(S)

01 NAME	02 D+B NUMBER	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	05 CITY	06 STATE	07 ZIP CODE
B.F. GOODRICH		R.R.1, BOX 15		HENRY	IL	61537

PARENT COMPANY (if applicable)

08 NAME	09 D+B NUMBER	10 STREET ADDRESS (P.O. Box, RFD #, etc.)	11 SIC CODE	12 CITY	13 STATE	14 ZIP CODE
B.F. GOODRICH		1600 OAKTREE BLVD.		CLEVELAND	OH	44131

III. PREVIOUS OWNER(S) (List most recent first)

01 NAME	02 D+B NUMBER	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	05 CITY	06 STATE	07 ZIP CODE
NA						

IV. REALTY OWNER(S) (if applicable; list most recent first)

01 NAME	02 D+B NUMBER	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	05 CITY	06 STATE	07 ZIP CODE
NA						

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

- E & E FILES, Reg V. Chicago

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 8 - OPERATOR INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
IL.T	180010324

II. CURRENT OPERATOR *(Provide if different from owner)*

01 NAME	02 D+B NUMBER
SAME AS OWNER	

03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER

OPERATOR'S PARENT COMPANY *(If applicable)*

10 NAME	11 D+B NUMBER
NA	

12 STREET ADDRESS *(P.O. Box, RFD #, etc.)*	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

III. PREVIOUS OPERATOR(S) *(List most recent first; provide only if different from owner)*

01 NAME	02 D+B NUMBER
NA	

03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

01 NAME	02 D+B NUMBER

03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

01 NAME	02 D+B NUMBER

03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

PREVIOUS OPERATORS' PARENT COMPANIES *(If applicable)*

10 NAME	11 D+B NUMBER
NA	--

12 STREET ADDRESS *(P.O. Box, RFD #, etc.)*	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

10 NAME	11 D+B NUMBER

12 STREET ADDRESS *(P.O. Box, RFD #, etc.)*	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

10 NAME	11 D+B NUMBER

12 STREET ADDRESS *(P.O. Box, RFD #, etc.)*	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

IV. SOURCES OF INFORMATION *(Cite specific references, e.g., state files, sample analysis, reports)*

- E & E FILES, Reg V.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 9 - GENERATOR/TRANSPORTER INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
ILT	180010324

II. ON-SITE GENERATOR

Field	Value
01 NAME	B.F. GOODRICH
02 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	R.R. 1, BOX 15
04 SIC CODE	
05 CITY	HENRY
06 STATE	IL
07 ZIP CODE	61537

III. OFF-SITE GENERATOR(S)

Field	Generator 1	Generator 2	Generator 3	Generator 4
01 NAME	NA			
02 D+B NUMBER				
03 STREET ADDRESS (P.O. Box, RFD #, etc.)				
04 SIC CODE				
05 CITY				
06 STATE				
07 ZIP CODE				

IV. TRANSPORTER(S)

Field	Transporter 1	Transporter 2	Transporter 3	Transporter 4
01 NAME	ROLLINS	LWD	CHEMCLEAR	
02 D+B NUMBER				
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	—	—	—	
04 SIC CODE				
05 CITY	DEER PARK	CALVERT CITY	CHICAGO	
06 STATE	TX	KY.	IL	
07 ZIP CODE				

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

- E & E FILES, Reg. V
- INTERVIEW WITH SITE REPRESENTATIVES BY FIT SEPT. 27, 1988.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION
01 STATE: VT | 02 SITE NUMBER: 1800103 24

II. PAST RESPONSE ACTIVITIES

01 ☐ A. WATER SUPPLY CLOSED — 02 DATE ____ — 03 AGENCY ____
04 DESCRIPTION: NA

01 ☐ B. TEMPORARY WATER SUPPLY PROVIDED — 02 DATE ____ — 03 AGENCY ____
04 DESCRIPTION: NA

01 ☐ C. PERMANENT WATER SUPPLY PROVIDED — 02 DATE ____ — 03 AGENCY ____
04 DESCRIPTION: NA

01 ☐ D. SPILLED MATERIAL REMOVED — 02 DATE ____ — 03 AGENCY ____
04 DESCRIPTION: NA *

01 ☐ E. CONTAMINATED SOIL REMOVED — 02 DATE ____ — 03 AGENCY ____
04 DESCRIPTION: NA *

01 ☐ F. WASTE REPACKAGED — 02 DATE ____ — 03 AGENCY ____
04 DESCRIPTION: NA

01 ☐ G. WASTE DISPOSED ELSEWHERE — 02 DATE ____ — 03 AGENCY ____
04 DESCRIPTION: NA

01 ☐ H. ON SITE BURIAL — 02 DATE ____ — 03 AGENCY ____
04 DESCRIPTION: NA

01 ☐ I. IN SITU CHEMICAL TREATMENT — 02 DATE ____ — 03 AGENCY ____
04 DESCRIPTION: NA

01 ☐ J. IN SITU BIOLOGICAL TREATMENT — 02 DATE ____ — 03 AGENCY ____
04 DESCRIPTION: NA

01 ☐ K. IN SITU PHYSICAL TREATMENT — 02 DATE ____ — 03 AGENCY ____
04 DESCRIPTION: NA *

01 ☐ L. ENCAPSULATION — 02 DATE ____ — 03 AGENCY ____
04 DESCRIPTION: NA

01 ☐ M. EMERGENCY WASTE TREATMENT — 02 DATE ____ — 03 AGENCY ____
04 DESCRIPTION: NA

01 ☐ N. CUTOFF WALLS — 02 DATE ____ — 03 AGENCY ____
04 DESCRIPTION: NA

01 ☐ O. EMERGENCY DIKING/SURFACE WATER DIVERSION — 02 DATE ____ — 03 AGENCY ____
04 DESCRIPTION: NA *

01 ☐ P. CUTOFF TRENCHES/SUMP — 02 DATE ____ — 03 AGENCY ____
04 DESCRIPTION: NA

01 ☐ Q. SUBSURFACE CUTOFF WALL — 02 DATE ____ — 03 AGENCY ____
04 DESCRIPTION: NA

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION
01 STATE: JLT | 02 SITE NUMBER: 180010324

II. PAST RESPONSE ACTIVITIES (Continued)

01 ☐ R. BARRIER WALLS CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION: NA

01 ☐ S. CAPPING/COVERING — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION: NA

01 ☐ T. BULK TANKAGE REPAIRED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION: NA

01 ☐ U. GROUT CURTAIN CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION: NA

01 ☐ V. BOTTOM SEALED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION: NA

01 ☐ W. GAS CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION: NA

01 ☐ X. FIRE CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION: NA

01 ☐ Y. LEACHATE TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION: NA

01 ☐ Z. AREA EVACUATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION: NA

01 ☐ 1. ACCESS TO SITE RESTRICTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION: NA

01 ☐ 2. POPULATION RELOCATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION: NA

01 ☐ 3. OTHER REMEDIAL ACTIVITIES — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION:

* A SULPURIC ACID SPILL WAS CONTAINED WITH DIKING. AN IN-SITU PHYSICAL TREATMENT WAS CONDUCTED AND THE SPILLED MATERIAL WAS REMOVED, AS WAS THE SOIL AT THE SPILL. THE IEPA DID NOT ORDER THIS ACTION BUT WAS PRESENT DURING THE ACTIVITIES.

III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

- E & E FILES, Reg V.
- INTERVIEW WITH SITE REPRESENTATIVES ON 9-27-88 BY FIT.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 11 - ENFORCEMENT INFORMATION

I. IDENTIFICATION	
01 STATE: IL	02 SITE NUMBER: 180010324

II. ENFORCEMENT INFORMATION

01 PAST REGULATORY/ENFORCEMENT ACTION ☐ YES ■ NO

02 DESCRIPTION OF FEDERAL, STATE, LOCAL REGULATORY/ENFORCEMENT ACTION

THE ILLINOIS EPA WAS INFORMED OF LEAKS AND SPILLS AND WAS PRESENT AT AT LEAST ONE CLEANUP.

III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

- E & E FILES

APPENDIX C

FIT SITE PHOTOGRAPHS

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: B.F. GOODRICH / HENRY PAGE 1 OF 14

U.S. EPA ID: ILT180010324 TDD: F05-8808-039 PAN: FIL0302SA

DATE: >9-27-88

TIME: >16:05

DIRECTION OF PHOTOGRAPH: > NORTH

WEATHER CONDITIONS: >OVERCAST

> 90°

PHOTOGRAPHED BY: > K. SIMS

SAMPLE ID (if applicable): > S1

DESCRIPTION: >SEDIMENT SAMPLE COLLECTED AT THE WEST >BANK OF THE ILLINOIS RIVER / SE CORNER OF SITE.

DATE: >9-27-88

TIME: >16:06

DIRECTION OF PHOTOGRAPH: > NORTH

WEATHER CONDITIONS: >OVERCAST

> 90°

PHOTOGRAPHED BY: > K. SIMS

SAMPLE ID (if applicable): > S1

DESCRIPTION: >WEST BANK OF THE ILUNOIS RIVER. NOTE >SITE EROSION CONTROL & FENCE, POWER LINES JUST SOUTH.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: B.F. GOODRICH / HENRY PAGE 2 OF 14

U.S. EPA ID: ILT180010324 TDD: F05-8808-039 PAN: FIL0302SA

DATE: >9-27-88

TIME: >15:36

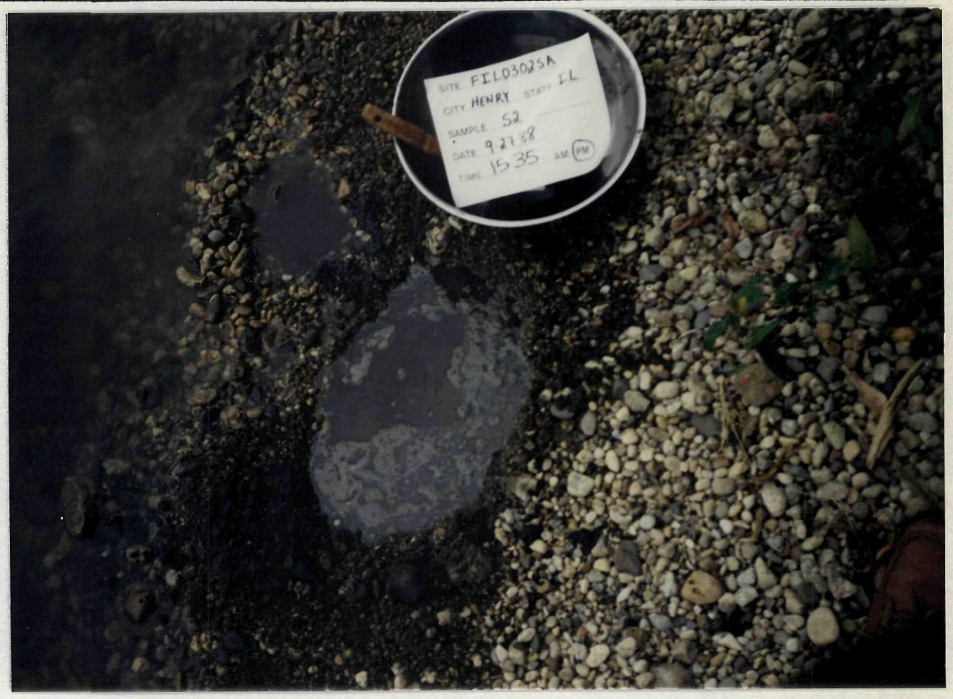
DIRECTION OF PHOTOGRAPH:
> SE

WEATHER CONDITIONS:
>OVERCAST

> 90°

PHOTOGRAPHED BY:
> K. SIMS

SAMPLE ID (if applicable):
> SZ



DESCRIPTION: > SEDIMENT SAMPLE COLLECTED ~450 YDS. SOUTH >OF SITE PROPERTY LINE & POWER LINE.

DATE: >9-27-88

TIME: >15:40

DIRECTION OF PHOTOGRAPH:
> NORTH

WEATHER CONDITIONS:
>OVERCAST

> 90°

PHOTOGRAPHED BY:
> K. SIMS

SAMPLE ID (if applicable):
> SZ

DESCRIPTION: > SAMPLE COLLECTED ALONG WEST BANK OF >THE ILLINOIS RIVER DOWNSTREAM FROM THE SITE.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: B.F. GOODRICH / HENRY PAGE 3 OF 14

U.S. EPA ID: ILT180010324 TDD: F05-8808-039 PAN: FIL0302SA

DATE: >9-27-88

TIME: >17:05

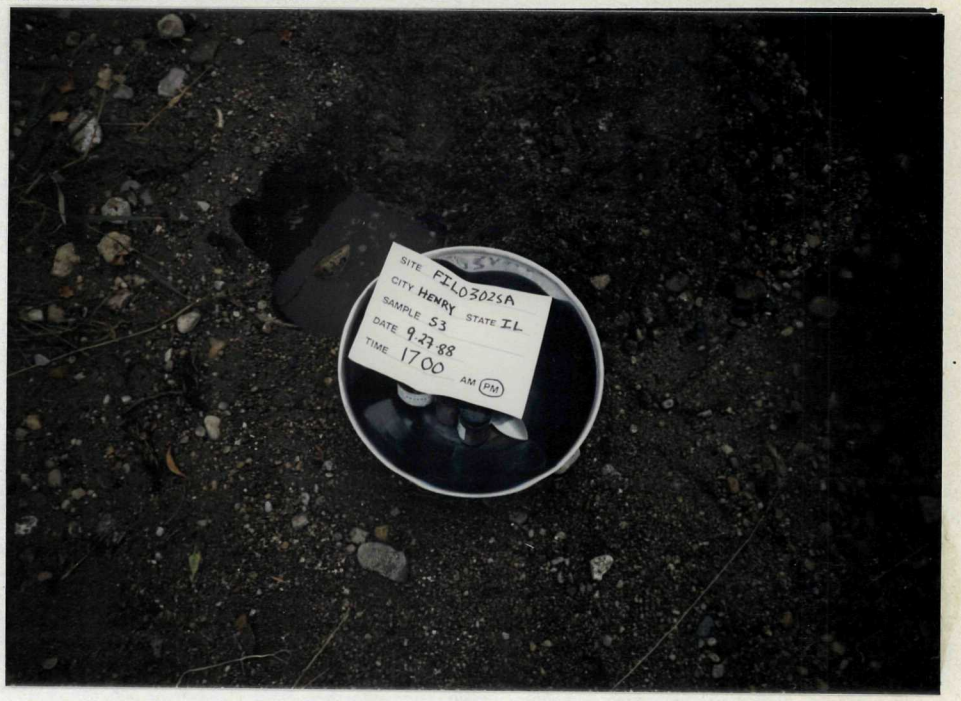
DIRECTION OF PHOTOGRAPH:
> NA

WEATHER CONDITIONS:
>OVERCAST

> 90°

PHOTOGRAPHED BY:
> K. SIMS

SAMPLE ID (if applicable):
> S3



DESCRIPTION: >SEDIMENT COLLECTED ALONG THE WEST BANK >OF THE ILLINOIS RIVER AND ADJACENT THE SITE

DATE: >9-27-88

TIME: >17:06

DIRECTION OF PHOTOGRAPH:
> SE

WEATHER CONDITIONS:
>OVERCAST

> 90°

PHOTOGRAPHED BY:
> K. SIMS

SAMPLE ID (if applicable):
> S3

DESCRIPTION: >ILLINOIS RIVER ADJACENT SITE.

>

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: B.F. GOODRICH / HENRY PAGE 4 OF 14

U.S. EPA ID: ILT180010324 TDD: F05-8808-039 PAN: FIL0302SA

DATE: >9-27-88

TIME: > 17:15

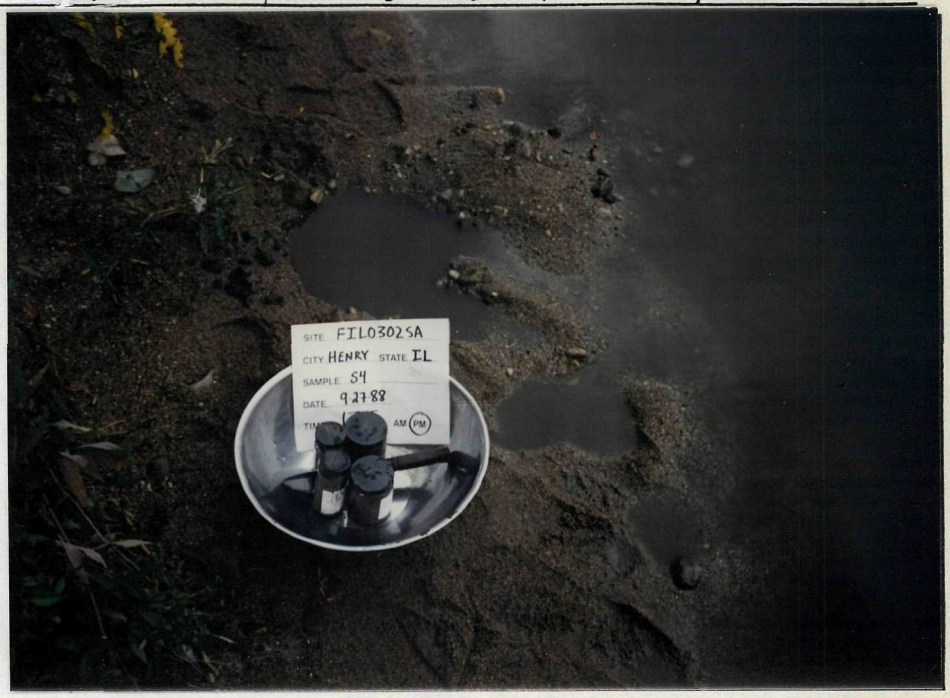
DIRECTION OF PHOTOGRAPH:
> NORTH

WEATHER CONDITIONS:
>OVERCAST

> 90°

PHOTOGRAPHED BY:
> K. SIMS

SAMPLE ID (if applicable):
> S4



DESCRIPTION: > SEDIMENT SAMPLE COLLECTED ALONG WEST BANK OF > ILLINOIS RIVER 50 TO 100 FT. SOUTH OF DUCK CLUB PIER.

DATE: >9-27-88

TIME: > 17:15

DIRECTION OF PHOTOGRAPH:
> NORTH

WEATHER CONDITIONS:
>OVERCAST

> 90°

PHOTOGRAPHED BY:
> K. SIMS

SAMPLE ID (if applicable):
> S4

DESCRIPTION: > NOTE DUCK CLUB PIER TO THE NORTH.
> SENACHWINE LAKE IN BACKGROUND.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: B.F. GOODRICH / HENRY PAGE 5 OF 14

U.S. EPA ID: ILT180010324 TDD: F05-8808-039 PAN: FIL0302SA

DATE: > 9-27-88

TIME: > 18:06

DIRECTION OF PHOTOGRAPH: > SOUTH

WEATHER CONDITIONS: > OVERCAST

> 90°

PHOTOGRAPHED BY: > K. SIMS

SAMPLE ID (if applicable): > SS

DESCRIPTION: > BACKGROUND SEDIMENT SAMPLE COLLECTED AT > EAST BANK OF ILLINOIS RIVER ~ 3 1/2 MILES UPSTREAM.

DATE: > 9-27-88

TIME: > 18:06

DIRECTION OF PHOTOGRAPH: > SW

WEATHER CONDITIONS: > OVERCAST

> 90°

PHOTOGRAPHED BY: > K. SIMS

SAMPLE ID (if applicable): > SS

DESCRIPTION: > EAST SIDE OF THE ILLINOIS RIVER.

>

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: B.F. GOODRICH / HENRY PAGE 6 OF 14

U.S. EPA ID: ILT180010324 TDD: F05-8808-039 PAN: F1L0302SA

DATE: > 9-27-88

TIME: > 10:35

DIRECTION OF PHOTOGRAPH:
> SE

WEATHER CONDITIONS:
> OVERCAST

> 90°

PHOTOGRAPHED BY:
> K. SIMS

SAMPLE ID (if applicable):
> —

DESCRIPTION: > GOODRICH PLANT FROM WEST OF THE SITE,
> NEAR RW 1

DATE: > 9-27-88

TIME: > 10:45

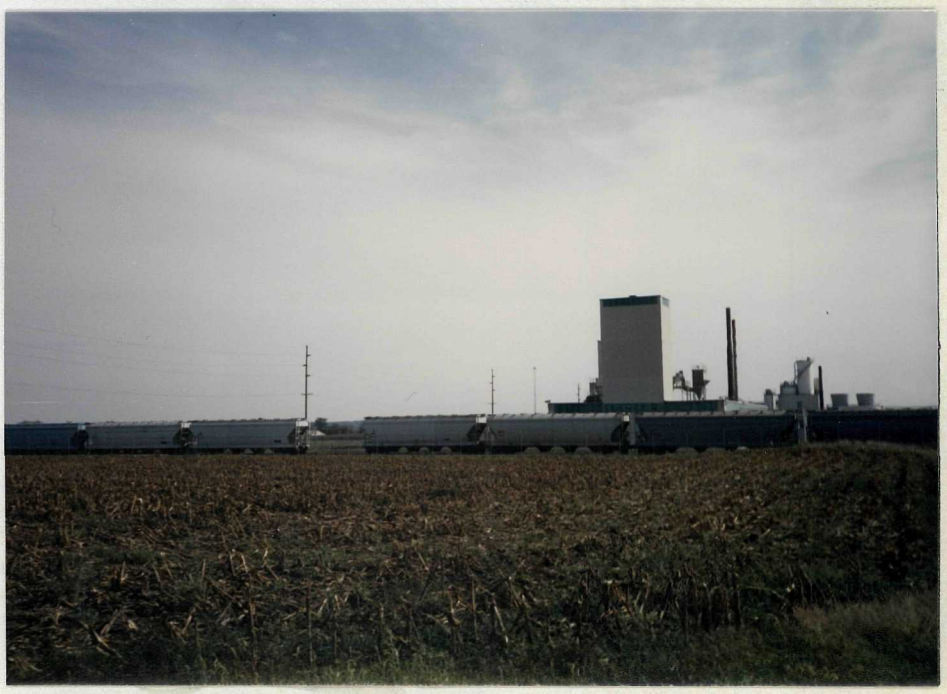
DIRECTION OF PHOTOGRAPH:
> EAST

WEATHER CONDITIONS:
> OVERCAST

> 90°

PHOTOGRAPHED BY:
> K. SIMS

SAMPLE ID (if applicable):
> —



DESCRIPTION: > GOODRICH PLANT FROM WEST OF THE
> SITE,

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: B.F. GOODRICH / HENRY PAGE 7 OF 14

U.S. EPA ID: ILT180010324 TDD: F05-8808-039 PAN: FIL0302SA

DATE: > 9-27-88

TIME: > 11:15

DIRECTION OF PHOTOGRAPH: > EAST

WEATHER CONDITIONS: > OVERCAST

> 90°

PHOTOGRAPHED BY: > K. SIMS

SAMPLE ID (if applicable): > RW1

DESCRIPTION: > B.F. GOODRICH WELL #10 LOCATED JUST > WEST OF THE PLANT IN CORNFIELD

DATE: > 9-27-88

TIME: > 11:15

DIRECTION OF PHOTOGRAPH: > EAST

WEATHER CONDITIONS: > OVERCAST

> 90°

PHOTOGRAPHED BY: > K. SIMS

SAMPLE ID (if applicable): > RW1

DESCRIPTION: > WELL #10. WELL IS FENCED IN AND > LOCKED.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: B.F. GOODRICH / HENRY PAGE 8 OF 14

U.S. EPA ID: ILT180010324 TDD: F05-8808-039 PAN: F1L0302SA

DATE: > 9-27-88

TIME: > 11:20

DIRECTION OF PHOTOGRAPH: > NORTH

WEATHER CONDITIONS: > OVERCAST

> 90°

PHOTOGRAPHED BY: > K. SIMS

SAMPLE ID (if applicable): > RW1

DESCRIPTION: > GOODRICH WELL #10

>

DATE: > 9-27-88

TIME: > 11:20

DIRECTION OF PHOTOGRAPH: > WEST

WEATHER CONDITIONS: > OVERCAST

> 90°

PHOTOGRAPHED BY: > K. SIMS

SAMPLE ID (if applicable): > RW1

DESCRIPTION: > VIEW WEST OF GOODRICH WELL #10

>

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: B.F. GOODRICH / HENRY PAGE 9 OF 14

U.S. EPA ID: ILT180010324 TDD: F05-8808-039 PAN: F1L0302SA

DATE: > 9-27-88

TIME: > 11:22

DIRECTION OF PHOTOGRAPH: > SOUTH

WEATHER CONDITIONS: > OVERCAST

> 90°

PHOTOGRAPHED BY: > K. SIMS

SAMPLE ID (if applicable): > RW1

DESCRIPTION: > VIEW SOUTH OF GOODRICH

> WELL #10

DATE: > 9-27-88

TIME: > 11:21

DIRECTION OF PHOTOGRAPH: > EAST

WEATHER CONDITIONS: > OVERCAST

> 90°

PHOTOGRAPHED BY: > K. SIMS

SAMPLE ID (if applicable): > RW1

DESCRIPTION: > VIEW EAST OF GOODRICH WELL #10

>

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: B.F. GOODRICH / HENRY PAGE 10 OF 14

U.S. EPA ID: ILT180010324 TDD: F05-8808-039 PAN: FIL0302SA

DATE: > 9-27-88

TIME: > 11:45

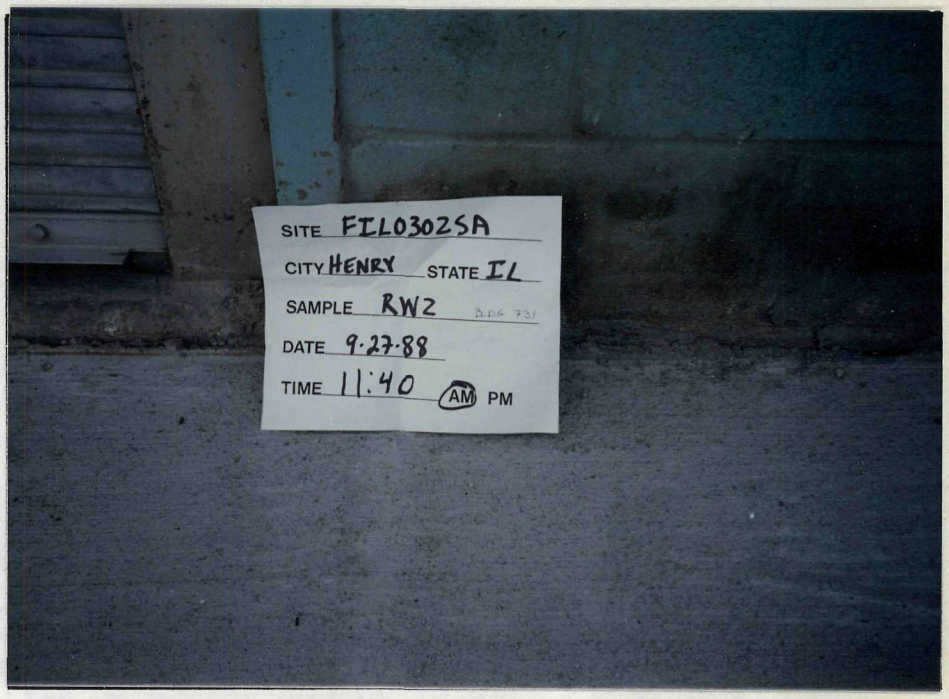
DIRECTION OF PHOTOGRAPH: > SOUTH

WEATHER CONDITIONS: > OVERCAST

> 90°

PHOTOGRAPHED BY: > K. SIMS

SAMPLE ID (if applicable): > RW2



DESCRIPTION: > GOODRICH WELL #2 INSIDE BUILDING #731

> NO PHOTOS ALLOWED INSIDE

DATE: > 9-27-88

TIME: > 11:46

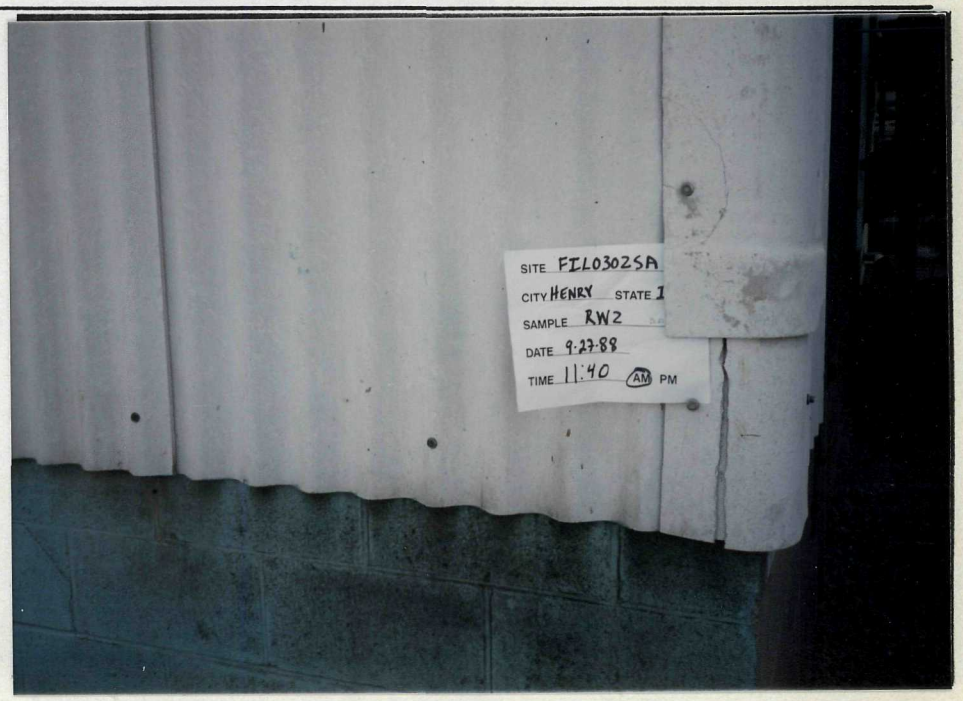
DIRECTION OF PHOTOGRAPH: > SOUTH

WEATHER CONDITIONS: > OVERCAST

> 90°

PHOTOGRAPHED BY: > K. SIMS

SAMPLE ID (if applicable): > RW2



DESCRIPTION: > GOODRICH WELL #2 INSIDE BLDG. #731

>

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: > B.F. GOODRICH / HENRY PAGE > 11 OF > 14

U.S. EPA ID: > ILT1800103 24 TDD: > F05-8808-039 PAN: > F1L0302SA

DATE: > 9-27-88

TIME: > 12:30

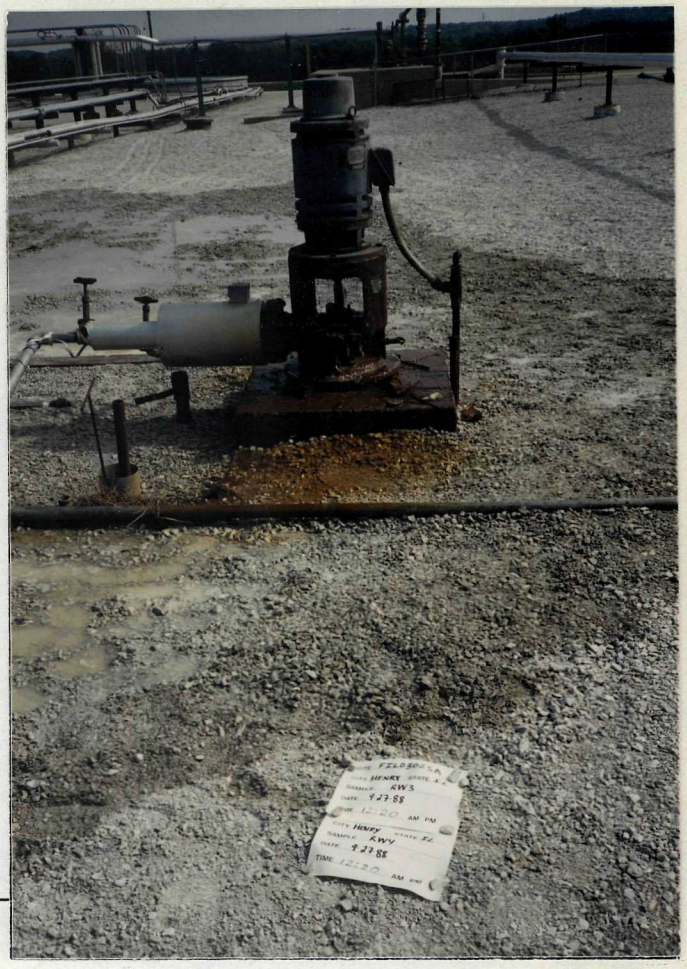
DIRECTION OF PHOTOGRAPH: > E

WEATHER CONDITIONS: > 90 OVERCAST

PHOTOGRAPHED BY: > K. SIMS

SAMPLE ID (if applicable): > RW 3 / RW4

DESCRIPTION: > GOODRICH
> WELL # 3, LOCATED
> EAST OF BUILDINGS
> & WEST OF THE
> ILLINOIS RIVER.



FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: >B.F. GOODRICH / HENRY PAGE >12 OF> 14

U.S. EPA ID: > ILT180010324 TDD: >F05-8808-039 PAN: >IFLO302SA

DATE: >9-27-88

TIME: >12:31

DIRECTION OF PHOTOGRAPH: >E

WEATHER CONDITIONS: >90° OVERCAST

PHOTOGRAPHED BY: > K. SIMS

SAMPLE ID (if applicable): > RW 3/RW4

DESCRIPTION: >GOODRICH

>WELL # 3. DUPLICATE

>ALSO COLLECTED

>HERE AS RW 4

>

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: B.F. GOODRICH / HENRY PAGE 13 OF 14

U.S. EPA ID: ILT180010324 TDD: F05-8808-039 PAN: FIL0302SA

DATE: >9-27-88

TIME: >14:45

DIRECTION OF PHOTOGRAPH: > NA

WEATHER CONDITIONS: >OVERCAST

> 90°

PHOTOGRAPHED BY: > K. SIMS

SAMPLE ID (if applicable): > RW5

DESCRIPTION: > WELL SAMPLE COLLECTED AT BOB STADEL > RESIDENCE JUST SOUTH OF SITE.

DATE: >9-27-88

TIME: > 14:45

DIRECTION OF PHOTOGRAPH: > NE

WEATHER CONDITIONS: >OVERCAST

> 90°

PHOTOGRAPHED BY: > K. SIMS

SAMPLE ID (if applicable): > RW5

DESCRIPTION: > STADEL'S RESIDENCE, NOTE B.F. >GOODRICH PLANT IN BACKGROUND

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: B.F. GOODRICH / HENRY PAGE 14 OF 14

U.S. EPA ID: ILT180010324 TDD: F05-8808-039 PAN: FIL0302SA

DATE: > 9-27-88

TIME: > 13:25

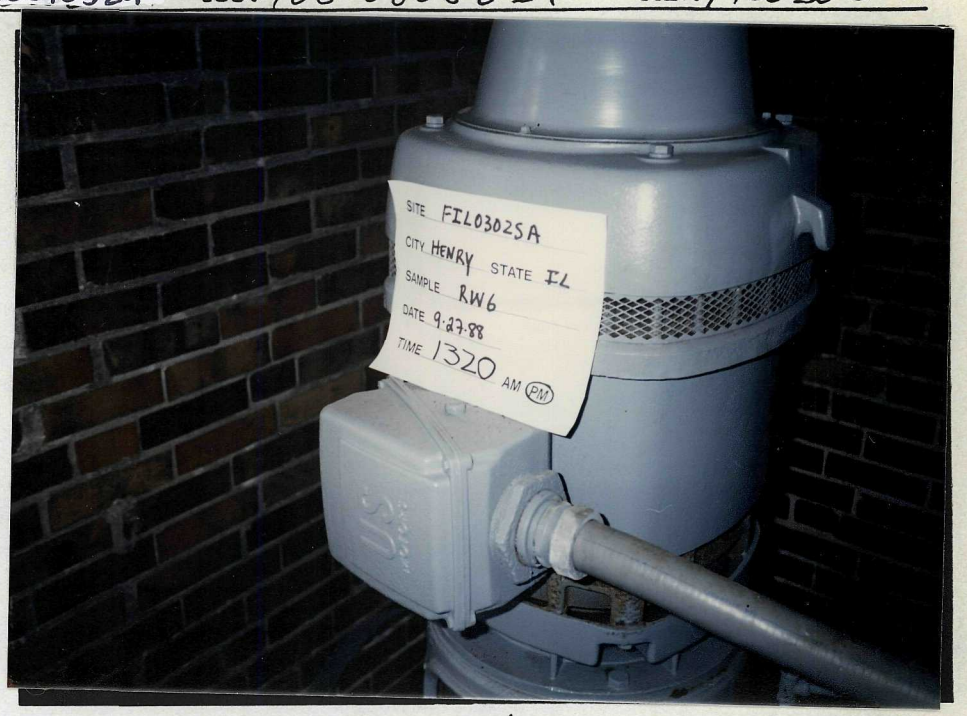
DIRECTION OF PHOTOGRAPH: > NA

WEATHER CONDITIONS: > OVERCAST

> 90°

PHOTOGRAPHED BY: > K. SIMS

SAMPLE ID (if applicable): > RW6



DESCRIPTION: > HENRY MUNICIPAL WELL #3. 12 INCH DIAMETER > WELL / 62 FT. DEEP. 1 1/2 MILES SOUTH OF SITE.

DATE: > 9-27-88

TIME: > 13:30

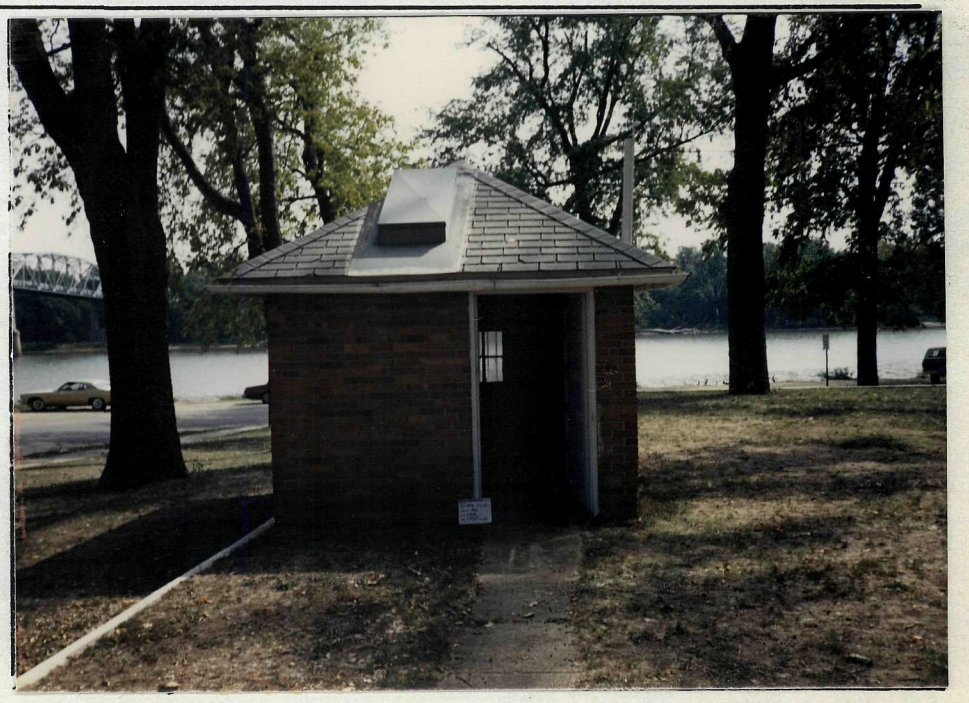
DIRECTION OF PHOTOGRAPH: > EAST

WEATHER CONDITIONS: > OVERCAST

> 90°

PHOTOGRAPHED BY: > K. SIMS

SAMPLE ID (if applicable): > RW6



DESCRIPTION: > HENRY MUNICIPAL WELL # 3 HOUSEING. > NOTE ILLINOIS RIVER IN BACKGROUND.

APPENDIX D

U.S. EPA TARGET COMPOUND LIST AND TARGET ANALYTE LIST QUANTITATION/DETECTION LIMITS

ROUTINE ANALYTICAL SERVICES
CONTRACT REQUIRED DETECTION AND QUANTITATION LIMITS

Contract Laboratory Program
Target Compound List
Quantitation Limits

COMPOUND	CAS #	WATER	SOIL SEDIMENT SLUDGE
Chloromethane	74-87-3	10 ug/L	10 ug/Kg
Bromomethane	74-83-9	10	10
Vinyl chloride	75-01-4	10	10
Chloroethane	75-00-3	10	10
Methylene chloride	75-09-2	5	5
Acetone	67-64-1	10	5
Carbon disulfide	75-15-0	5	5
1,1-dichloroethene	75-35-4	5	5
1,1-dichloroethane	75-34-3	5	5
1,2-dichloroethene (total)	540-59-0	5	5
Chloroform	67-66-3	5	5
1,2-dichloroethane	107-06-2	5	5
2-butanone (MEK)	78-93-3	10	10
1,1,1-trichloroethane	71-55-6	5	5
Carbon tetrachloride	56-23-5	5	5
Vinyl acetate	108-05-4	10	10
Bromodichloromethane	75-27-4	5	5
1,2-dichloropropane	78-87-5	5	5
cis-1,3-dichloropropene	10061-01-5	5	5
Trichloroethene	79-01-6	5	5
Dibromochloromethane	124-48-1	5	5
1,1,2-trichloroethane	79-00-5	5	5
Benzene	71-43-2	5	5
Trans-1,3-dichloropropene	10061-02-6	5	5
Bromoform	75-25-2	5	5
4-Methyl-2-pentanone	108-10-1	10	10
2-Hexanone	591-78-6	10	10
Tetrachloroethene	127-18-4	5	5
Tolene	108-88-3	5	5
1,1,2,2-tetrachloroethane	79-34-5	5	5
Chlorobenzene	108-90-7	5	5
Ethyl benzene	100-41-4	5	5
Styrene	100-42-5	5	5
Xylenes (total)	1330-20-7	5	5

Contract Laboratory Program
Target Compound List
Semivolatiles Quantitation Limits

COMPOUND	CAS #	WATER	SOIL SEDIMENT SLUDGE
Phenol	108-95-2	10 ug/L	330 ug/Kg
bis(2-Chloroethyl) ether	111-44-4	10	330
2-Chlorophenol	95-57-8	10	330
1,3-Dichlorobenzene	541-73-1	10	330
1,4-Dichlorobenzene	106-46-7	10	330
Benzyl Alcohol	100-51-6	10	330
1,2-Dichlorobenzene	95-50-1	10	330
2-Methylphenol	95-48-7	10	330
bis(2-Chloroisopropyl) ether	108-60-1	10	330
4-Methylphenol	106-44-5	10	330
N-Nitroso-di-n-dipropylamine	621-64-7	10	330
Hexachloroethane	67-72-1	10	330
Nitrobenzene	98-95-3	10	330
Isophorone	78-59-1	10	330
2-Nitrophenol	88-75-5	10	330
2,4-Dimethylphenol	105-67-9	10	330
Benzoic Acid	65-85-0	50	1600
bis(2-Chloroethoxy) methane	111-91-1	10	330
2,4-Dichlorophenol	120-83-2	10	330
1,2,4-Trichlorobenzene	120-82-1	10	330
Naphthalene	91-20-3	10	330
4-Chloroaniline	106-47-8	10	330
Hexachlorobutadiene	87-68-3	10	300
4-Chloro-3-methylphenol	59-50-7	10	330
2-Methylnaphthalene	91-57-6	10	330
Hexachlorocyclopentadiene	77-47-4	10	330
2,4,6-Trichlorophenol	88-06-2	10	330
2,4,5-Trichlorophenol	95-95-4	50	1600
2-Chloronaphthalene	91-58-7	10	330
2-Nitroaniline	88-74-4	50	1600
Dimethylphthalate	131-11-3	10	330
Acenaphthylene	208-96-8	10	330
2,6-Dinitrotoluene	606-20-2	10	330
3-Nitroaniline	99-09-2	50	1600
Acenaphthene	83-32-9	10	330
2,4-Dinitrophenol	51-28-5	50	1600
4-Nitrophenol	100-02-7	50	1600
Dibenzofuran	132-64-9	10	330
2,4-Dinitrotoluene	121-14-2	10	330
Diethylphthalate	84-66-2	10	330
4-Chlorophenyl-phenyl ether	7005-72-3	10	330

Contract Laboratory Program
Target Compound List
Semivolatiles Quantitation Limits

COMPOUND	CAS #	WATER	SOIL SLUDGE SEDIMENT
Fluorene	86-73-7	10 ug/L	330 ug/Kg
4-Nitroaniline	100-01-6	50	1600
4,6-Dinitro-2-methylphenol	534-52-1	50	1600
N-nitrosodiphenylamine	86-30-6	10	330
4-Bromophenyl-phenylether	101-55-3	10	330
Hexachlorobenzene	118-74-1	10	330
Pentachlorophenol	87-86-5	50	1600
Phenanthrene	85-01-8	10	330
Anthracene	120-12-7	10	330
Di-n-butylphthalate	84-74-2	10	330
Fluoranthene	206-44-0	10	330
Pyrene	129-00-0	10	330
Butylbenzylphthalate	85-68-7	10	330
3,3'-Dichlorobenzidine	91-94-1	20	660
Benzo(a)anthracene	56-55-3	10	330
Chrysene	218-01-9	10	330
bis(2-Ethylhexyl)phthalate	117-81-7	10	330
Di-n-octylphthalate	117-84-0	10	330
Benzo(b)fluoranthene	205-99-2	10	330
Benzo(k)fluoranthene	207-08-9	10	330
Benzo(a)pyrene	50-32-8	10	330
Indeno(1,2,3-cd)pyrene	193-39-5	10	330
Dibenz(a,h)anthracene	53-70-3	10	330
Benzo(g,h,i)perylene	191-24-2	10	330

Contract Laboratory Program
Target Compound List
Pesticide and PCB Quantitation Limits

COMPOUND	CAS #	WATER	SOIL SEDIMENT SLUDGE
alpha-BHC	319-84-6	0.05 ug/L	8 ug/Kg
beta-BHC	319-85-7	0.05	8
delta-BHC	319-86-8	0.05	8
gamma-BHC (Lindane)	58-89-9	0.05	8
Heptachlor	76-44-8	0.05	8
Aldrin	309-00-2	0.05	8
Heptachlor epoxide	1024-57-3	0.05	8
Endosulfan I	959-98-8	0.05	8
Dieldrin	60-57-1	0.10	16
4,4'-DDE	72-55-9	0.10	16
Endrin	72-20-8	0.10	16
Endosulfan II	33213-65-9	0.10	16
4,4'-DDD	72-54-8	0.10	16
Endosulfan sulfate	1031-07-8	0.10	16
4,4'-DDT	50-29-3	0.10	16
Methoxychlor (Mariate)	72-43-5	0.5	80
Endrin ketone	53494-70-5	0.10	16
alpha-Chlordane	5103-71-9	0.5	80
gamma-chlordane	5103-74-2	0.5	80
Toxaphene	8001-35-2	1.0	160
AROCLOR-1016	12674-11-2	0.5	80
AROCLOR-1221	11104-28-2	0.5	80
AROCLOR-1232	11141-16-5	0.5	80
AROCLOR-1242	53469-21-9	0.5	80
AROCLOR-1248	12672-29-6	0.5	80
AROCLOR-1254	11097-69-1	1.0	160
AROCLOR-1260	11096-82-5	1.0	160

Contract Laboratory Program
Target Analyte List
Inorganic Quantitation Limits

COMPOUND	PROCEDURE	SOIL WATER	SEDIMENT SLUDGE
Aluminum	ICP	200 ug/L	40 mg/Kg
Antimony	Furnace	60	2.4
Arsenic	Furnace	10	2
Barium	ICP	200	40
Beryllium	ICP	5	1
Cadmium	ICP	5	1
Calcium	ICP	5000	1000
Chromium	ICP	10	2
Cobalt	ICP	50	10
Copper	ICP	25	5
Iron	Icp	100	20
Lead	Furnace	5	1
Magnesium	ICP	5000	1000
Manganese	ICP	15	3
Mercury	Cold Vapor	0.2	0.008
Nickel	ICP	40	8
Potassium	ICP	5000	1000
Selenium	Furnace	5	1
Silver	ICP	10	2
Sodium	ICP	5000	1000
Thallium	Furnace	10	2
Vanadium	ICP	50	10
Zinc	ICP	20	4
Cyanide	Color	10	2

CENTRAL REGIONAL LABORATORY
DETECTION LIMITS

CENTRAL REGIONAL LABORATORY
VOLATILE DETECTION LIMITS

PARAMETER	CAS #	DETECTION LIMIt IN REAGENT WATER
Benzene	71-43-2	1.5 ug/L
Bromodichloromethane	75-27-4	1.5
Bromoform	75-25-2	1.5
Bromomethane	74-83-9	10
Carbon tetrachloride	56-23-5	1.5
Chlorobenzene	108-90-7	1.5
Chloroethane	75-00-3	1.5
2-Chloroethyl vinyl ether	110-75-8	1.5
Chloroform	67-66-3	1.5
Chloromethane	74-87-3	10
Dibromochloromethane	124-48-1	1.5
1,1-dichloroethane	75-34-3	1.5
1,2-dichloroethane	107-06-2	1.5
1,1-dichloroethene	75-35-4	1.5
trans-1,2-dichloroethene	156-60-5	1.5
1,2-dichloropropane	78-87-5	1.5
cis-1,3-dichlopropropene	10061-01-5	2
trans-1,3-dichloropropene	10061-02-6	1
Ethyl benzene	100-41-4	1.5
Methylene chloride*	75-09-2	1
1,1,2,2-tetrachloroethane	79-34-5	1.5
Tetrachloroethene	127-18-4	1.5
Toluene*	108-88-3	1.5
1,1,1-trichloroethane	71-55-6	1.5
1,1,2-trichloroethane	79-00-5	1.5
Trichloroethene	79-01-6	1.5
Vinyl chloride	75-01-4	10
Acrolein	107-02-8	100
Acetone*	67-64-1	75
Acrylonitrile	107-13-1	50
Carbon disulfide	75-15-0	3
2-butanone	78-93-3	(50)
Vinyl acetate	108-05-4	15
4-Methyl-2-Pentanone	108-10-1	(3)
2-Hexanone	519-78-6	(50)
Styrene	100-42-5	1
m-xylene	108-38-3	2
o-xylene**	95-47-6	
p-xylene**	106-42-3	2.5**
Total Xylene	1330-02-7	

* Common Laboratory Solvents.
Blank Limit is 5X Method Detection Limit.
( ) Values in parentheses are estimates.
Actual values are being determined at this time.
** The o-xylene and p-xylene are reported as a total of the two.

CRL
SEMIVOLATILE DETECTION LIMITS

PARAMETER	CAS #	DETECTION LIMIT	BLANK LIMIT
Aniline	62-53-3	1.5 ug/L	3 ug/L
Bis(2-chloroethyl)ether	111-44-4	1.5	3
Phenol	108-95-2	2	4
2-Chlorophenol	95-57-8	2	5
1,3-Dichlorobenzene	541-73-1	2	4
1,4-Dichlorobenzene	106-46-7	2	4
1,2-Dichlorobenzene	95-50-1	2.5	5
Benzyl alcohol	100-51-6	2	5
Bis(2-chloroisopropyl) ether	39638-32-9	2.5	5
2-Methylphenol	95-48-7	1	2
Hexdachloroethane	67-72-1	2	4
N-nitrosodipropylamine	621-64-7	1.5	3
Nitrobenzene	98-95-3	2.5	5
4-Methylphenol	106-44-5	1	2
Isophorone	78-59-1	2.5	5
2-Nitrophenol	88-75-5	2	4
2,4-Dimethylphenol	105-67-9	2	4
Bis(2-chloroethoxy)methane	111-91-1	2.5	5
2,4-Dichlorophenol	120-83-2	2	4
1,2,4-Trichlorobenzene	120-82-1	2	4
Naphthalene	91-20-3	2	4
4-Chloroaniline	106-47-8	2	4
Hexachlorobutadiene	87-68-3	2.5	5
Benzoic acid	65-85-0	(30)	(60)
2-Methylnapthalene	91-57-6	2	4
4-Chloro-3-methylphenol	59-50-7	1.5	3
Hexachlorocyclopentadiene	77-47-4	2	4
2,4,6-Trichlorophenol	88-06-2	1.5	3
2,4,5-Trichlorophenol	95-95-4	1.5	3
2-Chloronapthalene	91-58-7	1.5	3
Acenapthylene	208-96-8	1.5	3
Dimethyl phthalate	131-11-3	1.5	3
2,6-Dinitrotoluene	606-20-2	1	2
Acenaphthene	83-32-9	1.5	3
3-Nitroaniline	99-09-2	2.5	5
Dibenzofuran	132-64-9	1	2
2,4-Dinitrophenol	51-28-5	(15)	(30)
2,4-Dinitrotoluene	121-14-2	1	2

cont.

CRL
SEMIVOLATILE DETECTION LIMITS

PARAMETER	CAS #	DETECTION LIMIT	BLANK (a) LIMIT
Fluorene	86-73-7	1 ug/L	2 ug/L
4-Nitrophenol	100-02-7	1.5	3
4-Chlorophenyl phenyl ether	7005-72-3	1	2
Diethylphthalate	84-66-2	1	2
4,6-dinitro-2-methylphenol	534-52-1	(15)	(30)
1,2-Diphenylhydrazine	122-66-7	1	2
n-Nitrosodiphenylamine *	86-30-6		
Diphenylamine *	122-39-4	1.5	3
4-Nitroaniline	100-01-6	3	6
4-Bromophenyl-phenylether	101-55-3	1.5	3
Hexachlorobenzene	118-74-1	1.5	3
Pentachlorophenol	87-86-5	2	4
Phenanthrene	85-01-8	1	2
Anthracene	120-12-7	2.5	5
Di-n-butylphthalate	84-74-2	2	4
Fluoranthene	206-44-0	1.5	3
Pyrene	129-00-0	1.5	3
Butylbenzylphthalate	85-68-7	3.5	7
Chrysene **	218-01-9		
Benzo(a)anthracene **	56-55-3	1.5	3
bis(2-Ethylhexyl)phthalate	117-81-7	1	2
Di-n-octyl phthalate	117-84-0	1.5	3
Benzo(b)fluoranthene ***	205-99-2		
Benzo(k)fluoranthene ***	207-08-9	1.5	3
Benzo(a)pyrene	50-32-8	2	4
Indeno(1,2,3-cd)pyrene	193-39-5	3.5	7
Dibenzo(a,h)anthracene	53-70-3	2.5	5
Benzo(g,h,i)perylene	191-24-2	4	8
2-Nitroaniline	88-74-4	1	2

cont.

* These two parameters are reported as a total.
** These two parameters are reported as a total.
*** These two parameters are reported as a total.
(a) If the blank limit is exceeded, the sample is reextracted and rerun.
( ) Values in parentheses are estimates.
The actual values are being determined at this time.

Note: Limits are for reagent water.

CRL
PESTICIDE AND PCB DETECTION LIMITS

PARAMETER	CAS #	DETECTION LIMIT
Aldrin	309-00-2	0.005 ug/L
alpha BHC	319-84-6	(0.010)
beta BHC	319-85-7	(0.005)
delta BHC	319-86-8	(0.005)
gama BHC (Lindane)	58-89-9	0.005
Chlordane	57-74-8	(0.020)
4,4'-DDD	72-54-8	(0.020)
4,4'-DDE	72-55-9	(0.005)
4,4'-DDT	50-29-3	0.020
Dieldrin	60-57-1	0.010
Endosulfan I	959-98-8	0.010
Endosulfan II	33213-65-9	0.010
Endosulfan sulfate	1031-07-8	(0.10)
Endrin	72-20-8	0.010
Endrin aldehyde	7421-93-4	(0.030)
Endrin ketone	53494-70-5	(0.030)
Heptachlor	76-44-8	0.030
Heptachlor epoxide	1024-57-3	0.005
4,4'-Methoxychlor	72-43-5	0.020
Toxaphene	8001-35-2	(0.25)
PCB-1242	53469-21-9	(0.10)
PCB-1248	12672-29-6	(0.10)
PCB-1254	11097-69-1	(0.10)
PCB-1260	11096-82-5	(0.10)

( ) Values in parentheses are estimates.
Actual values are being determined at this time.

Note: Limits are for reagent water.

CRL
INORGANIC DETECTION LIMITS

JANUARY 1986

COMPOUND	PROCEDURE	DETECTION LIMITS	RANGE	UNITS
Aluminum	ICP	80	80 to 1,000,000	ug/L
Antimony	Furnace	2	2 to 30	ug/L
Arsenic	Furnace	2	2 to 30	ug/L
Barium	ICP	6	6 to 20,000	ug/L
Beryllium	ICP	1	1 to 20,000	ug/L
Boron	ICP	80	80 to 20,000	ug/L
Cadmium	ICP	10	10 to 20,000	ug/L
Cadmium	Furnace	0.2	0.2 to 2	ug/L
calcium	ICP	0.5	0.5 to 1,000	mg/L
Chromium	ICP	8	8 to 20,000	ug/L
Cobalt	ICP	6	6 to 20,000	ug/L
Copper	ICP	6	6 to 20,000	ug/L
iron	ICP	80	80 to 1,000,000	ug/L
Lead	Furnace	2	2 to 30	ug/L
Lead	ICP	70	70 to 20,000	ug/L
Lithium	ICP	10	10 to 20,000	ug/L
Magnesium	ICP	0.1	0.1 to 200	mg/L
Maganese	ICP	5	5 to 20,000	ug/L
Mercury	Cold vapor	0.1	0.1 to 2	ug/L
Molybdenum	ICP	15	15 to 20,000	ug/L
Nickel	ICP	15	15 to 20,000	ug/L
Potassium	ICP	5	5 to 1,000	mg/L
Selenium	Furnace	2	2 to 30	ug/L
Silver	ICP	6	6 to 10,000	ug/L
Sodium	ICP	1	1 to 1,000	mg/L
Strontium	ICP	10	10 to 20,000	ug/L
Sulfide	Titration	1	< 1	mg/L
Sulfide	Color	0.05	< 1	mg/L
Thallium	Furnace	2	2 to 30	ug/L
Titanium	ICP	25	25 TO 20,000	UG/L
Tin	ICP	40	40 to 20,000	ug/L
Vanadium	ICP	5	5 to 20,000	ug/L
Yttrium	ICP	5	5 to 20,000	ug/L
Zinc	ICP	40	40 to 1,000,000	ug/L
Cyanide	AA	8	8 to 200	ug/L

Note: The above list may or may not contain compounds that are routinely analyzed at CRL for low level detection limits for drinking water.

See inorganic Routine Analytical Services for related CAS #.

SPECIAL ANALYTICAL SERVICES
DETECTION LIMITS

Drinking Water Samples

SPECIAL ANALYTICAL SERVICES DRINKING WATER
VOLATILE QUANTITATION LIMITS

PARAMETER	CAS #	DETECTION LIMIT IN REAGENT WATER
Benzene	71-43-2	1.5 ug/L
Bromodichloromethane	74-27-4	1.5
Bromoform	75-25-2	1.5
Bromomethane	74-83-9	10
Carbon tetrachloride	56-23-5	1.5
Chlorobenzene	108-90-7	1.5
Chloroethane	75-00-3	1.5
2-Chloroethyl vinyl ether	110-75-8	1.5
Chloroform	67-66-3	1.5
Chloromethane	74-87-3	10
Dibromochloromethane	124-48-1	1.5
1,1-Dichloroethane	75-34-3	1.5
1,2-Dichloroethane	107-06-2	1.5
1,1-Dichloroethene	75-35-4	1.5
trans-1,2-Dichloroethene	156-60-5	1.5
1,2-Dichloropropane	78-87-5	1.5
cis-1,3-Dichloropropene	10061-01-5	2
trans-1,3-Dichlopropropene	10061-02-6	1
Ethyl benzene	100-41-4	1.5
Methylene chloride *	75-09-2	1
1,1,2,2-Tetrachloroethane	79-34-5	1.5
Tetrachloroethene	127-18-4	1.5
Toluene *	108-88-3	1.5
1,1,1-Trichloroethane	71-55-6	1.5
1,1,2-Trichloroethane	79-00-5	1.5
Trichloroethene	79-01-6	1.5
Vinyl chloride	75-01-4	10
Acrolein	107-02-8	100
Acetone *	67-64-1	75
Acrylonitrile	107-13-1	50
Carbon disulfide	75-15-0	3
2-Butanone	78-93-3	(50)
Vinyl acetate	108-05-4	15
4-Methyl-2-pentanone	108-10-1	(3)
2-Hexanone	519-78-6	(50)
Styrene	100-42-5	1
m-Xylene	108-38-3	2
o-Xylene **	95-47-6	
p-Xylene **	106-42-3	2.5 **
Xylene (total)	1330-02-7	

* Common laboratory solvents.
Blank limit is 5x method detection limit.
( ) Values in parentheses are estimates.
actual values are being determined at this time.
** The o-xylene and p-xylene are reported as a total of the two.

SAS DRINKING WATER
SEMIVOLATILES QUANTITATION LIMITS

PARAMETER	CAS #	DETECTION LIMIT
Aniline	62-53-3	1.5 ug/l
Bis(2-chloroethyl)ether	111-44-4	1.5
Phenol	108-95-2	2
2-Chlorophenol	95-57-8	2
1,3-Dichlorobenzene	541-73-1	2
1,4-Dichlorobenzene	106-46-7	2
1,2-Dichlorobenzene	95-50-1	2.5
Benzyl alcohol	100-51-6	2
Bis(2-chloroisopropyl)ether	39638-32-9	2.5
2-Methylphenol	95-48-7	1
Hexachloroethane	67-72-1	2
n-Nitrosodipropylamine	621-64-7	1.5
Nitrobenzene	98-95-3	2.5
4-Methylphenol	88-75-5	1
Isophorone	78-59-1	2.5
2-Nitrophenol	88-75-5	2
2,4-Dimethylphenol	105-67-9	2
Bis(2-Chloroethoxy)methane	111-91-1	2.5
2,4-Dichlorophenol	120-83-2	2
1,2,4-Trichlorobenzene	120-82-1	2
Naphthalene	91-20-3	2
4-Chloroaniline	106-47-8	2
Hexachlorobutadiene	87-68-3	2.5
Benzoic Acid	65-85-0	(30)
2-Methylnapthalene	91-57-6	2
4-Chloro-3-methylphenol	59-50-7	1.5
Hexachlorocyclopentadiene	77-47-4	2
2,4,6-Trichlorophenol	88-06-2	1.5
2,4,5-Trichlorophenol	95-95-4	1.5
2-Chloronapthalene	91-58-7	1.5
Acenapthylhene	208-96-8	1.5
Dimethyl phthalate	131-11-3	1.5
2,6-Dinitrotoluene	606-20-2	1
Acenaphthene	83-32-9	1.5
3-Nitroaniline	99-09-2	2.5
Dibenzofuran	132-64-9	1
2,4-Dinitrophenol	51-28-5	(15)
2,4-Dinitrotoluene	121-14-2	1

SAS DRINKING WATER
SEMIVOLATILE QUANTITATION LIMITS

PARAMETER	CAS #	DETECTION LIMIT
Fluorene	86-73-7	1 ug/L
4-Nitrophenol	100-02-7	1.5
4-Chlorophenyl phenyl ether	7005-72-3	1
Diethyl phthalate	84-66-2	1
4,6-Dinitro-2-methylphenol	534-52-1	(15)
1,2-Diphenylhydrazine	122-66-7	1
n-Nitrosodiphenylamine *	86-30-6	
Diphenylamine *	122-39-4	1.5
4-Nitroaniline	100-01-6	3
4-Bromophenyl-phenylether	101-55-3	1.5
Hexachlorobenzene	118-74-1	1.5
Pentachlorophenol	87-86-5	2
Phenanthrene	85-01-8	1
Anthracene	120-12-7	2.5
di-n-Butyl phthalate	84-74-2	2
Fluoranthene	206-44-0	1.5
Pyrene	129-00-0	1.5
Butyl benzyl phthalate	85-68-7	3.5
Chrysene **	218-01-9	
Benzo(A)Anthracene **	56-55-3	1.5
bis(2-ethylhexyl)phthalate	117-81-7	1
di-n-Octyl phthalate	117-84-0	1.5
Benzo(b)fluoranthene ***	205-99-2	
Benzo(k)fluoranthene ***	207-08-9	1.5
Benzo(a)pyrene	50-32-8	2
Indeno(1,2,3-cd)pyrene	193-39-5	3.5
Dibenzo(a,h)anthracene	53-70-3	2.5
Benzo(g,h,i)perylene	191-24-2	4
2-Nitroaniline	88-74-4	1

* These two parameters are reported as a total.
** These two parameters are reported as a total.
*** These two parameters are reported as a total.

( ) Values in parentheses are estimates.
The actual values are being determined at this time.

Note: Limits are for reagent water.

SAS DRINKING WATER
PESTICIDE AND PCB QUANTITATION LIMITS

PARAMETER	CAS #	DETECTION LIMIT
Aldrin	309-00-2	0.005 ug/L
alpha BHC	319-84-6	(0.010)
beta BHC	319-85-7	(0.005)
delta BHC	319-86-8	(0.005)
gamma BHC (Lindane)	58-89-9	0.005
Chlordane	57-74-9	(0.020)
4,4'-DDD	72-54-8	(0.020)
4,4'-DDE	72-55-9	(0.005)
4,4'-DDT	50-29-3	0.020
Dieldrin	60-57-1	0.010
Endosulfan I	959-98-8	0.010
Endosulfan II	33213-65-9	0.010
Endosulfan sulfate	1031-07-8	(0.10)
Endrin	72-20-8	0.010
Endrin Aldehyde	7421-93-4	(0.030)
Endrin Ketone	53494-70-5	(0.030)
Heptachlor	76-44-8	0.030
Heptachlor Epoxide	1024-57-3	0.005
4,4'-Methoxychlor	72-43-5	0.020
Toxaphene	8001-35-2	(0.25)
PCB-1242	53469-21-9	(0.10)
PCB-1248	12672-29-6	(0.10)
PCB-1254	11097-69-1	(0.10)
PCB-1260	11096-82-5	(0.10)

( ) Values in parentheses are estimates.
Actual values are being determined at this time.

Note: Limits are for reagent water.

SAS DRINKING WATER
INORGANIC DETECTION LIMITS

JANUARY 1986

PARAMETER	PROCEDURE	DETECTION LIMIT
Aluminum	ICP	100
Antimony	GFAA	2
Arsenic	GFAA	2
Barium	ICP	50
Beryllium	ICP	5
Cadmium	ICP	10
Cadmium	GFAA	0.2
Calcium	ICP	1000
Chromium	ICP	10
Cobalt	ICP	10
Copper	ICP	10
Iron	ICP	100
Lead	GFAA	2
Magnesium	ICP	1000
Manganese	ICP	10
Mercury	Cold Vapor	0.2
Nickel	ICP	20
Potassium	ICP	2000
Selenium	GFAA	2
Silver	ICP	5
Sodium	ICP	1000
Thallium	GFAA	2
Tin	ICP	40
Vanadium	ICP	10
Zinc	ICP	20
Cyanide	Colorimetric	5.0

Note: The above list may or may not contain compounds that are routinely analyzed at CRL for low level detection limits for drinking water.

See inorganic Routine Analytical Services (RAS) for related CAS #.

SPECIAL ANALYTICAL SERVICES
DETECTION LIMITS

High Concentration Samples

SAS HIGH CONCENTRATION
VOLATILES DETECTION LIMITS

PARAMETER	CAS #	DETECTION LIMIT
Benzene	71-43-2	2.5 mg/Kg
Bromodichloromethane	75-27-4	2.5
Bromoform	75-25-2	2.5
Bromomethane	74-83-9	5.0
Carbon tetrachloride	56-23-5	2.5
Chlorobenzene	108-90-7	2.5
Chloroethane	75-00-3	5.0
2-Chloroethylvinylether	110-75-8	5.0
Chloroform	67-66-3	2.5
Chloromethane	74-87-3	2.5
Dibromochloromethane	124-48-1	2.5
1,2-Dichloropropane	156-87-5	2.5
1,2-Dichloroethane	107-06-2	2.5
1,1-Dichloroethene	75-35-4	2.5
trans-1,2-Dichloroethene	156-60-5	2.5
1,2-Dichloropropane	78-87-5	2.5
cis-1,3-Dichloropropene	10061-01-5	2.5
trans-1,3-Dichloropropene	10061-02-6	2.5
Ethyl benzene	100-41-4	2.5
Methylene chloride	75-09-2	2.5
1,1,2,2-Tetrachloroethane	79-34-5	2.5
Tetrachlorethene	127-18-4	2.5
Toluene	108-88-3	2.5
1,1,1-Trichloroethane	71-55-6	2.5
1,1,2-Trichloroethane	79-00-5	2.5
Trichloroethene	79-01-6	2.5
Vinyl chloride	75-01-4	5.0
Acetone	67-64-1	5.0
Carbon disulfide	75-15-0	2.5
2-Butanone	78-93-3	5.0
Vinyl acetate	108-05-4	5.0
4-Methyl-2-pentanone	108-10-1	5.0
2-Hexanone	591-78-6	5.0
Styrene	100-42-5	2.5
Xylenes	1330-02-7	2.5

* o-xylene and p-xylene are reported as a total.

SAS HIGH CONCENTRATION
SEMIVOLATILES DETECTION LIMITS

PARAMETER	CAS #	DETECTION LIMIT	
Bis(2-chloroethyl)ether	11-44-4	20	
Phenol	108-95-2	20	mg/Kg
2-Chlorophenol	95-57-8	20	
1,3-Dichlorobenzene	541-73-1	20	
1,4-Dichlorobenzene	106-46-7	20	
1,2-Dichlorobenzene	95-50-1	20	
Benzyl alcohol	100-51-6	20	
bis(2-chloroisopropyl)ether	39638-32-9	20	
2-Methylphenol	95-48-7	20	
Hexachloroethane	67-72-1	20	
N-Nitrosodipropylamine	621-64-7	20	
Nitrobenzene	98-95-3	20	
4-Methylphenol	106-44-5	20	
Isophorone	78-59-1	20	
2-Nitrophenol	88-75-5	20	
2,4-Dimethylphenol	105-67-9	20	
bis(2-chloroethoxy)methane	111-91-1	20	
2,4-Dichlorophenol	120-83-2	20	
1,2,4-Trichlorobenzene	120-82-1	20	
Naphthalene	91-20-3	20	
4-Chloroaniline	106-47-8	20	
Hexachlorobutadiene	87-68-3	20	
Benzoic acid	65-85-0	100	
2-Methylnapthalene	91-57-6	20	
4-Chloro-3-methylphenol	59-50-7	20	
Hexachlorocyclopentadiene	77-47-4	20	
2,4,6-Trichlorophenol	88-06-2	20	
2,4,5-Trichlorophenol	95-95-4	100	
2-Chloronaphthalene	91-58-7	20	
Acenapthylene	208-96-8	20	
Dimethyl phthalate	131-11-3	20	
2,6-Dinitrotoluene	606-20-2	20	
Acenaphthene	83-32-9	20	
2-Nitroaniline	88-74-4	100	
3-Nitroaniline	99-09-2	100	
Dibenzofuran	132-64-9	20	
2,4-Dinitrophenol	51-28-5	100	
2,4-Dinitrotoluene	121-14-2	20	

SAS HIGH CONCENTRATION
SEMIVOLATILES DETECTION LIMITS

PARAMETER	CAS #	DETECTION LIMIT
Fluorene	86-73-7	20 mg/kg
4-Nitrophenol	100-02-7	100
4-Chlorophenyl phenyl ether	7005-72-3	20
diethyl phthalate	84-66-2	20
4,6-Dinitro-2-methylphenol	534-52-1	100
1,2-Diphenylhydrazine	122-66-7	
n-Nitroso diphenylamine *	86-30-6	20
Diphenylamine *	122-39-4	
4-Nitroaniline	100-01-6	100
4-Bromophenyl phenyl ether	101-55-3	20
Hexachlorobenzene	118-74-1	20
Pentachlorophenol	87-86-5	100
Phenanthrene	85-01-8	20
Anthracene	120-12-7	20
di-n-Butyl phthalate	84-74-2	20
Fluoranthene	206-44-0	20
Pyrene	129-00-0	20
Butyl benzyl phthalate	85-68-7	20
Chrysene **	218-01-9	20
Benzo(a)anthracene **	56-55-3	20
bis(2-ethylhexyl)phthalate	117-81-7	20
di-n-octyl phthalate	117-84-0	20
Benzo(b)fluoranthene ***	205-99-2	20
Benzo(k)fluoranthene ***	207-08-9	20
Indeno(1,2,3-cd)pyrene	193-39-5	20
Dibenzo(a,h)anthracene	53-70-3	20
Benzo(g,h,i)perylene	191-24-2	20
2-Nitroaniline	88-74-4	100

* These two parameters are reported as a total.
** These two parameters are reported as a total.
*** These two parameters are reported as a total.

( ) Values in parentheses are estimates.
The actual values are being determined at this time.

Note: Limits are for reagent water.

SAS HIGH CONCENTRATION
PESTICIDE AND PCB DETECTION LIMITS

PARAMETER	CAS #	DETECTION LIMIT
Aldrin	309-00-2	20 mg/Kg
alpha BHC	319-84-6	20
beta BHC	319-85-7	20
delta BHC	319-86-8	20
gama BHC (Lindane)	58-89-9	20
Chlordane	57-74-9	20
alpha-Chlordane		
4,4'-DDD	72-54-8	20
4,4'-DDE	72-55-9	20
4,4'-DDT	50-29-3	20
Dieldrin	60-57-1	20
Endosulfan I	959-98-8	20
Endosulfan II	33213-65-9	20
Endosulfan sulfate	1031-07-8	20
Endrin	72-20-8	20
Endrin aldehyde	7421-93-4	20
Endrin ketone	53494-70-5	20
Heptachlor	76-44-8	20
Heptachlor epoxide	1024-57-3	20
4,4'-Methoxychlor	72-43-5	20
Toxaphene	8001-35-2	20
Monochlorobiphenyl	27323-18-8	100
Dichlorobiphenyl	25512-42-9	100
Trichlorobiphenyl	25323-68-6	100
Pentachlorobiphenyl	25429-29-2	100
Hexachlorobiphenyl	26601-64-9	100
Heptachlorobiphenyl	28655-71-2	100
Octachlorobiphenyl	31472-83-0	100
Nonochlorobiphenyl	53742-07-7	100
Decachlorobiphenyl	2051-24-3	100

SAS HIGH CONCENTRATION
INORGANIC DETECTION LIMITS

PARAMETER	CAS #	DETECTION LIMITS
Aluminum	7429-90-5	400 mg/kg
Antimony	7440-36-0	20
Arsenic	7440-38-2	20
Barium	7440-39-3	120
Beryllium	7440-41-7	40
Cadmium	7440-43-9	6
Calcium	7440-70-2	800
Chromium	7440-47-3	28
Cobalt	7440-48-4	20
Copper	7440-50-8	40
Iron	7439-89-6	200
Lead	7439-92-1	60
Lithium		
Magnesium	7439-95-4	800
Manganese	7439-96-5	40
Mercury	7439-97-6	0.3
Molybdenum		40
Nickel	7440-02-0	40
Potassium	7440-09-7	
Selenium	7782-49-1	20
Silicon		800
Silver	7440-22-4	40
Sodium	7440-23-5	4000
Strontium		
Thallium	7440-28-0	400
Titanium		400
Tin		
Vanadium	7440-62-2	200
Yttrium		
Zinc	7440-66-6	40
Cyanide		1.5
Sulfide		2.5
Conductivity		2.0 uhmos/cm

Note: Compounds with detection limits are analyzed by this method. Compounds without detection limits can be analyzed by a special SAS request.

SC = Specific conductance value

APPENDIX E

WELL LOGS OF THE AREA OF THE SITE

tate Water Survey Division

Illinois Institute of Natural Resources

605 East Springfield
Champaign, IL 61802
Mail: Box 232, Urbana, IL 61801
217/333-2210

13N10E-10.5d

February 26, 1979

#1

WELL PRODUCTION TEST
W.R. GRACE CHEMICAL CO., WELL NO. 2
MARSHALL COUNTY

By

Layne-Western Company

Well Owner:	W.R. Grace Chemical Co.
Well Location:	2500 ft N. and 2600 ft. E. of the SW corner of Section 10, T13N, R10E
Date Well Completed:	April, 1978
Date of Production Test:	April 17 and 18; and June 26, 1978
Length of Production Test:	7½, 8, and 0.8 hours
Aquifer:	Sand and gravel

PUMPED WELL DATA

Well No.	2
Drilling Contractor:	Layne-Western Co., Aurora
Drill Cuttings:	State Geological Survey
Depth:	80 ft.
Hole Record:	48 in. 0-10 ft, 38 in. 10-82 ft.
Casing Record:	12 in. steel pipe + 1-69 ft.
Screen Record:	12 in. 69-80 ft. No. 60 slot Johnson stainless steel
Annulus and Gravel Pack Record:	Redimix cement 0-20 ft., Torpedo sand 20-54 ft., about 20 tons of No. 2 Muscatine gravel 54-82 ft.
Test Pump and Power:	10 in. 6 stage Layne test pump and GMC engine on April 17 and 18; permanent pump equipment on June 26, 1978
Measuring Equipment:	6 x 5 in. orifice and electric dropline on April 17 and 18; 6 x 4 in. orifice and 60 ft. airline on June 26
Time Water Sample Collected:	April 18, 1978
Temperature of Water:	54°F
Nonpumping Water Level:	43 ft. on April 17, 43.3 on April 18, and 44 ft. on June 26
Permanent Pump:	10 in. 3 stage Layne & Bowler (Serial No. 87253) set at 60 ft., rated at 500 gpm at about 105 ft. TDH, and has 60 ft. of 6 in. column pipe. Powered by a 25-hp 1800 rpm motor. 5 ft. of 6 in. suction pipe.

#1

W.R. Grace Chemical Co.
Well No. 2

February 29, 1979
Pumped Well

DRILLERS LOG

Formation	From	To
Top soil	0	1
Brown clay	1	4.5
Brown fine sand to coarse gravel	4.5	23
Fine sand to medium gravel	23	25
Brown silt	25	29
Fine sand to coarse gravel with boulders	29	69
Brown fine to coarse sand	69	80
Gray shale	80	82

White Copy – Ill. Dept. Public Health
Yellow Copy – Well Contractor
Blue Copy – Well Owner

INSTRUCTIONS – DRILL...

FILL IN ALL PERTINENT INFORMATION REQUIRED AND MAIL ORIGINAL TO STATE DEPARTMENT OF PUBLIC HEALTH, ROOM 616, STATE OFFICE BUILDING, SPRINGFIELD, ILLINOIS, 62706. DO NOT DETACH GEOLOGICAL / WATER SURVEYS SECTION. BE SURE TO PROVIDE PROPER WELL LOCATION.

1/6

#1

ILLINOIS DEPARTMENT OF PUBLIC HEALTH
WELL CONSTRUCTION REPORT

1. Type of Well
   a. Dug____. Bored____. Hole Diam.____in. Depth____ft.
   Curb material_____. Buried Slab: Yes_____No_____
   b. Driven_____. Drive Pipe Diam.____in. Depth____ft.
   c. Drilled __x__. Finished in Drift __x__. In Rock_____.
   Tubular_____. Gravel Packed __x__.
   d. Grout:

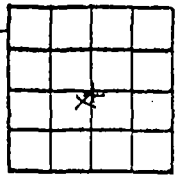
(KIND)	FROM (Ft.)	TO (Ft.)
Redimix	20	grade

2. Distance to Nearest:
   Building _____ Ft. Seepage Tile Field _____
   Cess Pool _____ Sewer (non Cast Iron) _____
   Privy _____ Sewer (Cast Iron) _____
   Septic Tank _____ Barnyard _____
   Leaching Pit _____ Manure Pile _____
3. Is water from this well to be used for human consumption?
   Yes __x__ No_____
4. Date well completed April 21, 1978
5. Permanent Pump Installed? Yes __x__ No_____
   Manufacturer Layne Type 3 Stg. 10" RKHC
   Capacity 500 gpm. Depth of setting 60 ft.
6. Well Top Sealed? Yes __x__ No_____
7. Pitless Adaptor Installed? Yes_____ No __x__
8. Well Disinfected? Yes __x__ No_____
9. Water Sample Submitted? Yes __x__ No_____

REMARKS:

GEOLOGICAL WATER SURVEYS WATER WELL RECORD

10. Dept. Mines and Minerals permit No. 72863 Year 4/11/78
11. Property owner W.R.Grace Chem. Co Well No. 2
    Address P.O. Box 1667, Henry IL
    Driller Layne-Western Co. Inc License No. 102-13
12. Water from drift (Formation) 13. County Marshall
    at depth 69 to 80 ft. Sec. 10 SW
    14. Screen: Diam. 12 in. Twp. 13N
    Length: 11 ft. Slot 60 Rng. 10E
    Elev. 485'



SHOW LOCATION IN SECTION PLAT
~~SW corner~~ Lohmeier
2500' N & 2600' W of SE

15. Casing and Liner Pipe

Diam. (in.)	Kind and Weight	From (Ft.)	To (Ft.)
12	3/8" wall, steel	69	+1

16. Size Hole below casing: 38 in.
17. Static level 43'4" ft. below casing top which is 1 ft. above ground level. Pumping level 48'7" ft. when pumping at 517 gpm for 8 hours.

18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
~~See attached log~~		
over		
(CONTINUE ON SEPARATE SHEET IF NECESSARY)		

SIGNED D.G. Lohmeier DATE 6/21/78
D. G. Lohmeier, P.E.

#1

#1

Top soil	0	1
Brown clay	1	4.5
Brown fine sand to coarse gravel	4.5	23
Fine sand to medium gravel	23	25
Brown silt	25	29
Fine sand to coarse gravel with boulders	29	69
Brown fine to doarse sand	69	80
Gray shale	80	82

DRILLER'S LOG
WELL NO. 1

#2

Formation	From	To
Silty clay	0	5
Fine sand to coarse gravel	5	19
Boulders	19	22
Fine to coarse sand and gravel	22	41
Fine to med. sand with streaks of gravel	41	71
Fine sand to coarse sand with gravel and boulders	71	78
Boulders cemented with clay	78	80
Shale- sandy	80	91

Marshall County

GW

#2

January 4, 1967

WELL PRODUCTION TEST
GRACE CHEMICAL COMPANY, WELL NO. 1
by

Layne-Western Company, Aurora, Illinois

2155'N, 215?E of SW

Owner:	Grace Chemical Company
Location:	185'S & 2150'E of NW corner, SW 1/4 Section 10, T. 13N., R. 10E.
Date Completed:	September 1966
Date of Test:	September 19, 1966
Length of Test:	24 Hours
Aquifer:	Sand and Gravel

WELL DATA

PUMPED WELL

Well No:	1
Driller:	Layne-Western Company
Drill Cuttings:	---
Depth:	78
Hole Record:	12" 0-78'
Casing Record:	12"
Pump and Power:	Layne; Ford Engine
Measuring Point:	Top of Casing
Measuring Equipment:	65' airline, 4 x 3" orifice
Static Level:	45'

White Copy – Ill. Dept. of Public Health
Yellow Copy – Well Contractor
Blue Copy – Well Owner

INSTRUCTIONS TO DRILLERS

FILL IN ALL PERTINENT INFORMATION REQUESTED AND MAIL ORIGINAL TO STATE DEPARTMENT OF PUBLIC HEALTH, CONSUMER HEALTH PROTECTION, 535 WEST JEFFERSON, SPRINGFIELD, ILLINOIS, 62761. DO NOT DETACH GEOLOGICAL/WATER SURVEYS SECTION. BE SURE TO PROVIDE PROPER WELL LOCATION.

ILLINOIS DEPARTMENT OF PUBLIC HEALTH WELL CONSTRUCTION REPORT

1. Type of Well
   a. Dug ____. Bored ____. Hole Diam. ____ in. Depth ____ ft.
      Curb material ____. Buried Slab: Yes ____ No ____
   b. Driven ____. Drive Pipe Diam. ____ in. Depth ____ ft.
   c. Drilled ✓. Finished in Drift ✓. In Rock ____.
      Tubular ____. Gravel Packed ✓.
   d. Grout:

(KIND)	FROM (Ft.)	TO (Ft.)

2. Distance to Nearest:
   Building 4 Ft. Seepage Tile Field ____
   Cess Pool ____ Sewer (non Cast Iron) ____
   Privy ____ Sewer (Cast Iron) ____
   Septic Tank 218' Barnyard 218'
   Leaching Pit ____ Manure Pile ____
3. Well furnishes water for human consumption? Yes ✓ No ____
4. Date well completed 6/4/76
5. Permanent Pump Installed? Yes ✓ Date 6/10/76 No ____
   Manufacturer Sta-rite Type sub Location 113
   Capacity 20 gpm. Depth of Setting 113 Ft.
6. Well Top Sealed? Yes ____ No ____ Type ____
7. Pitless Adapter Installed? Yes ✓ No ____
   Manufacturer Baker Model Number ____
   How attached to casing? compression
8. Well Disinfected? Yes ✓ No ____
9. Pump and Equipment Disinfected? Yes ✓ No ____
10. Pressure Tank Size 164 gal. Type 2-82 Duraseal
    Location underground
11. Water Sample Submitted? Yes ____ No ✓

REMARKS:

GEOLOGICAL AND WATER SURVEYS WELL RECORD

10. Property owner Donald Wenrich (Wenrich) Well No. 0
    Address R.R. 1, Heading, Illinois
    Driller Alvin Hagemann License No. 102-72
11. Permit No. 47917 Date 5/25/1976
12. Water from drift (Formation) at depth 117 to 121 ft.
13. County McLean
    Sec. 9.5
    Twp. 13N
    Rge. 1DE
    Elev. ____
14. Screen: Diam. 5 in.
    Length: 4 ft. Slot 20
15. Casing and Liner Pipe

Diam. (in.)	Kind and Weight	From (Ft.)	To (Ft.)
5"	T+C 15#/ft.		

SHOW LOCATION IN SECTION PLAT

1968'S, 756'E, NW/c, NW

16. Size Hole below casing: ____ in.
17. Static level 60 ft. below casing top which is 2' about. ft. above ground level. Pumping level 63 ft. when pumping at 20 gpm for 2 hours.

18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
top soil	1	1
clay yellow	4'	5
gravel	50	55
water sand fine.	56	110
water sand coarse.	11	121

(CONTINUE ON SEPARATE SHEET IF NECESSARY)

SIGNED Alvin Hagemann DATE 6/20/78

#3

IDPH 4.065
1/74 – KNB-1

-20

2 Mi. W of SITE

#4

10

Henry (R.F.D.#)

City Henry Township County Marshall

Section 8 NE Twp. No. T13N Range R10E

Location (in feet from section corner) 2390 feet south of and 3825 feet west of the northeast corner of the section.

Owner Thos. Landers Estate Authority Adam Pickerman, Tenant, Henry, Illinois.

Contractor unknown Address

Date drilled perhaps 60-70 years ago Elev. above sea level top of well 545 feet

Depth total depth about 90 feet

Log

Were drill cuttings saved Where filed

Size hole 3½ ft. diam. If reduced, where and how much

Casing record brick casing entire depth

Distance to water when not pumping 83 ft. 7 in. Distance to water is

feet after pumping at G. P. M. for hours.

Reference point for above measurements well curb

Type of pump hand pump and windmill Distance to cylinder

Length of cylinder Length of suction pipe below cylinder

Length stroke Speed

Hours used per day Type of power

Rating of motor Rating of pump in G. P. M.

Can following be measured: (1) Static water level 83 ft. 7 in.

(2) Pumping level yes (3) Discharge 2 feet

(4) Influence on other wells no

Temperature of water Was water sample collected

Date Effect of water on meters, hot water coils, etc.

Date of Analysis Analysis No.

Recorder T. W. Burkhart

Date March 3, 1934

#5

City Henry (P.F.D.#) Henry Township County Marshall

Section 9.1d Twp. No. T13N Range R10E

Location (in feet from section corner) 3260 feet south of and 160 feet west of the northeast corner of the section.

Owner Henry Wallace Authority owner

Contractor unknown Address

Date drilled unknown, old Elev. above sea level top of well 490 feet

Depth about 50 feet.

Log

Were drill cuttings saved Where filed

Size hole 3½ ft. diam. If reduced, where and how much

Casing record brick casing entire depth

Distance to water when not pumping 47 ft. 7½ in. Distance to water is

feet after pumping at G. P. M. for hours.

Reference point for above measurements wooden well platform

Type of pump hand pump and power jack Distance to cylinder

Length of cylinder Length of suction pipe below cylinder

Length stroke Speed

Hours used per day Type of power

Rating of motor Rating of pump in G. P. M.

Can following be measured: (1) Static water level 47 feet 7½ inches

(2) Pumping level yes (3) Discharge 2 feet

(4) Influence on other wells no

Temperature of water Was water sample collected

Date Effect of water on meters, hot water coils, etc.

Date of Analysis Analysis No.

Recorder P.W.Burkhart

Date March 7, 1934.

2-25

#6

City Henry (P.W.D.#) County Marshall

Henry Township

Section 4 Twp. No. T13N Range R10E

Location (in feet from section corner) 40 feet north of and 2860 feet west of the southeast corner of the section.

Owner A.B.Smith, Henry, Ill. Authority

Contractor unknown Address

Date drilled unknown Elev. above sea level top of well 525 feet.

Depth over 80 feet.

Log

Were drill cuttings saved Where filed

Size hole 3½ ft. diam If reduced, where and how much

Casing record brick casing entire depth.

Distance to water when not pumping 78 ft. 8½ in. Distance to water is

feet after pumping at G. P. M. for hours.

Reference point for above measurements well curb

Type of pump hand pump and windmill Distance to cylinder

Length of cylinder Length of suction pipe below cylinder

Length stroke Speed

Hours used per day Type of power

Rating of motor Rating of pump in G. P. M.

Can following be measured: (1) Static water level 78 ft. 8½ in.

(2) Pumping level yes (3) Discharge 2 feet.

(4) Influence on other wells no

Temperature of water Was water sample collected

Date Effect of water on meters, hot water coils, etc.

Date of Analysis Analysis No.

Recorder F.W.Burkhart

Date March 3, 1934.

32

✓ #7 17

Henry (R.F.D.#)

City Henry Township County Marshall

Section 10 Twp. No. T13N Range R10E

Location (in feet from section corner) 120 feet north of and 450 feet east of the southwest corner of the section.

Owner Maria F. Guyer Estate Authority Ivan Barry (tenant)

Contractor unknown Address

Date drilled more than 40 years ago Elev. above sea level top of well 485 feet.

Depth 47 feet

Log

Were drill cuttings saved Where filed

Size hole 3½ ft. diam. If reduced, where and how much

Casing record brick casing entire depth

Distance to water when not pumping 39 feet Distance to water is

feet after pumping at G. P. M. for hours.

Reference point for above measurements well platform

Type of pump hand pump and power jack Distance to cylinder

Length of cylinder Length of suction pipe below cylinder

Length stroke Speed

Hours used per day Type of power

Rating of motor Rating of pump in G. P. M.

Can following be measured: (1) Static water level 39 feet

(2) Pumping level yes (3) Discharge 2 feet

(4) Influence on other wells no

Temperature of water Was water sample collected

Date Effect of water on meters, hot water coils, etc.

Date of Analysis Analysis No.

Recorder P.W.Burkhart

2807-18313 12

Date March 7, 1934.

LOG OF TEST WELL 1

711 ILLINOIS AVE. AURORA, ILL.

TEST HOLE No. 1-66

TEST WELL REPORT Test well 1

1. Owner. B. F. Goodrich Chemical Co. Contract No. (C-822E) Date. 8/4/66
2. City Henry State Ill.
3. Drillers Name Robert Johnson Helpers Bill Quiggins
4. Static Water Level 54'10" How Obtained — Washed ( ) Pumped ( )
5. Size Mud Pit — Length 11' , Width 3'

DRILLERS LOG

BOTTOM FT	MUD LOSS INCHES	MUD WEIGHT	DESCRIPTION OF FORMATION	REMARKS
0.0 1.0	5 pits of mud		Black topsoil	
1.0 3.0			Brown clay	
3.0 36.0			Brown fine to coarse sand and fine to coarse gravel	
36.0 57.0			Brown fine to coarse sand, some fine to med. gravel	
57.0 61.0			Boulder	
61.0 66.5			Gray sandy clay	
66.5 69.0	8½"		Brown fine to coarse sand, trace of gravel	
69.0 70.0			Red very sandy clay	
70.0 85.0			Brown fine to coarse sand and fine to coarse gravel	
85.0 103.5			Brown fine to coarse sand, some fine to med. gravel	
103.5 105.0			Shale	

(G - Other Info)

LOG OF TEST WELL 2

[illegible] 721 ILLINOIS AVE. AURORA, ILL.

TEST HOLE No. 2-66

TEST WELL REPORT Test Well 2

1. Owner B. F. Goodrich Chemical Co. Contract No. (C-822E) Date 8/9/66
2. City Henry State Ill.
3. Driller's Name Robt. Johnson Helpers L. Kemper
4. Static Water Level ____ How Obtained — Washed ( ) Pumped ( )
5. Size Mud Pit — Length 12' Width 3'

DRILLER'S LOG

TOP FT.	BOTTOM FT.	MUD LOSS INCHES	MUD WEIGHT	DESCRIPTION OF FORMATION	REMARKS
0.0	1.0			Black topsoil	
1.0	4.0			Brown clay	
4.0	27.0	30"		Brown fine to coarse sand and fine to coarse gravel, boulders	
27.0	52.0	6"		Brown fine to coarse sand, some fine to med. gravel	
52.0	78.0	7"		Brown fine to coarse sand, trace of fine gravel	
78.0	80.0			Red sandy clay	
80.0	86.5			Gray sandy silt	
86.5	93.5			Brown fine to coarse sand, trace of fine gravel	
93.5	95.0			Gray clay	
95.0	99.0			Gray clayey sand, boulders	
99.0	106.0			Brown fine to med. sand	
106.0	110.0			Shale	

(3— Other ...ch...

LOG OF TEST WELL 3

[illegible] ILLINOIS AVE. AURORA, ILL.

TEST HOLE No. 3-66

TEST WELL REPORT Test well 3

1. Owner B. F. Goodrich Chemical Co. Contract No. (CE-822) Date 8/17/66
2. City Henry State Ill.
3. Driller's Name Robt. Johnson Helpers L. Kemper
4. Static Water Level How Obtained — Washed ( ) Pumped ( )
5. Size Mud Pit — Length 15' Width 3'

DRILLERS LOG

FROM FT.	TO FT.	MUD LOSS INCHES	MUD WEIGHT	DESCRIPTION OF FORMATION	REMARKS
0.0	1.0			Black topsoil	
1.0	2.5	11"		Brown clay	
2.5	16	2.5'-25		Brown fine to coarse sand and fine to coarse gravel	
16	31.5			Brown fine to coarse sand, some fine to med. gravel	
31.5	35			Brown fine to coarse gravel and sand, boulder	
35	52.5			Brown fine to coarse sand and fine gravel	
52.5	58.5	25' to 58.5 6"		Boulder, fine to coarse gravel	4 hr. to drill for 52.5 to 65' with rock bit
58.5	59.5	Mud		Boulder or lime	
59.5	64			Brown fine to coarse gravel and boulder	
64	74			Grey very silty sand, hard	
74	82.5			Grey sandy clay, seams of sand 2" 3"	
82.5	109	82.58 to 109' 5" Mud		Brown fine to coarse sand, trace of fine gravel	
109	110			Boulders	
110	115			Shale	

(See Other Side)

LOG OF WELL 1

Layne-Western Company
321 ILLINOIS AVE. AURORA, ILL.

TEST HOLE No. 1-57

TEST WELL REPORT Well 1

1. Owner Goodrich Chemical Company Contract No. (212) Date July 21, 1957
2. City Henry, State Illinois
3. Drillers Name Tom Taupert Helpers Bob Johnson
4. Static Water Level 16' How Obtained — Washed (X) Pumped (X)
5. Size Mud Pit — Length 12' Width 10'

DRILLERS LOG

TOP FT.	BOTTOM FT.	MUD LOSS INCHES	MUD WEIGHT	DESCRIPTION OF FORMATION	REMARKS
				Strata of sand	
0	3			Dirty fine sand to coarse gravel.	
3	6		9 lbs.	Loose fine to coarse sand.	
6	13		9 lbs.	Fine sand to medium coarse gravel.	
13	17	1	9 lbs.	Loose fine to coarse sand, some coarse gravel.	
17	25		9 lbs.	Loose fine to coarse sand, (Mill Set) gravel.	
25	31		9 lbs.	Loose fine to coarse sand, more gravel.	
31	35			Sandy brown clay.	
35	37	Little loss		Tight fine to coarse sand.	
37	40	Little loss		Coarse gravel and boulders	
40	43			Soft grey clay	
43	47	Little loss		Fine sand to coarse gravel. Thin streaks of clay.	
47	48			Boulder	
48	57			Very soft sandy buff clay, (gravel embedded)	
57	62		10.2lbs	Loose fine sand to fine gravel.	Snails and shells
62	76	3"	10.2lbs	Loose fine sand to medium coarse gravel.	Snails and shells
76	79		10.2lbs	Loose fine to coarse sand	
79	80		10.2lbs	Loose fine sand and coarse gravel	
80	83			Black gumbo Snails and shells.	
83	100			Hard blue-grey shale.	

(See Other Side)

LOG OF WELL 2

18. Did you seal bottom of well? Yes Thickness 3/8 inches, material Steel

19. Was well under-reamed? No From ____ feet to ____ feet.
From ____ feet to ____ feet.
From ____ feet to ____ feet.

20. If all screen was not placed at bottom, state how it was spaced.
From ____ feet to ____ feet; from ____ feet to ____ feet; from ____ feet to ____ feet.

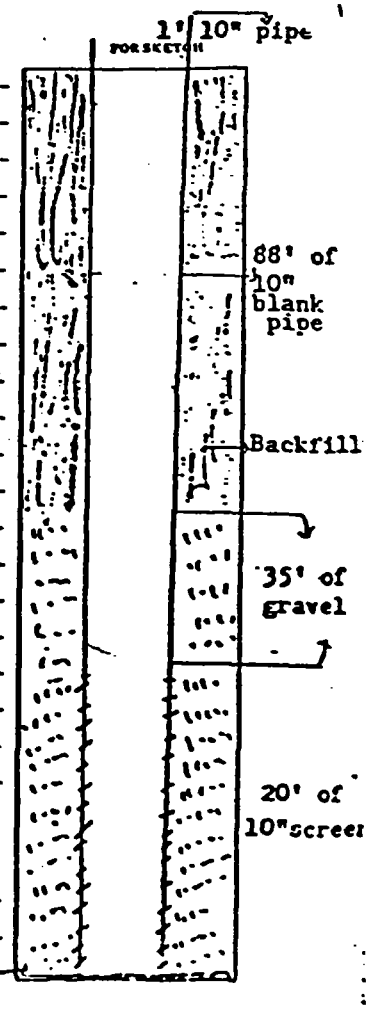
21. Depth of well (from ground level to top of plug) 108 feet ____ inches.

22. Was cement placed around or between any of the casings? No

23. If so, state where, how much and method used: ____

24. Log of well from ground level:

Feet		Feet	Formation
0	to	3	Start top soil
3	to	57	Coarse sand & boulders
57	to	81	Med. coarse sand, few boulders
81	to	107	Med. caorse sand, trace of fine sand
	to		
107	to	108	Med. coarse sand, trace of fine sand, trace of brown clay
	to		
108	to	109	Gray shale
	to		
	to		
	to		
	to		
	to		
	to		
	to		
	to		
	to		
	to		
	to		
	to		



25. Remarks:
10" casing is approx. 1' above ground level

LOG OF WELL 4

18. Did you seal bottom of well? Yes Thickness 3/8 inches, material steel

19. Was well under-reamed? No From _____ feet to _____ feet.
From _____ feet to _____ feet.
From _____ feet to _____ feet.

20. If all screen was not placed at bottom, state how it was spaced.
From _____ feet to _____ feet; from _____ feet to _____ feet; from _____ feet to _____ feet.

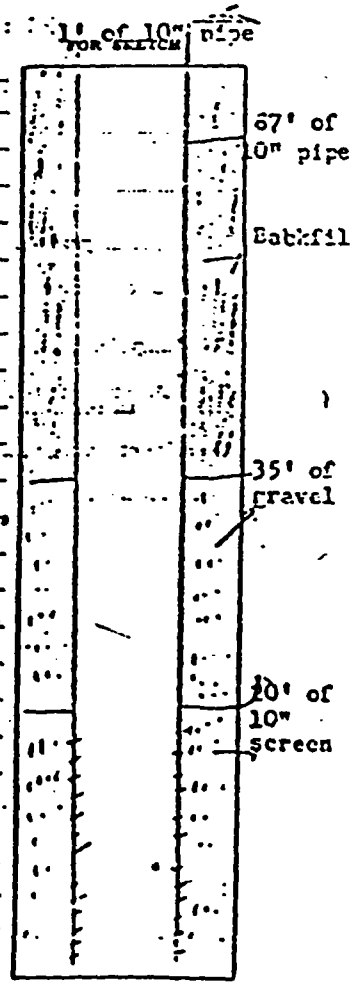
21. Depth of well (from ground level to top of plug) 107 feet _____ inches.

22. Was cement placed around or between any of the casings? No

23. If, so, state where, how much and method used. _____

24. Log of well from ground level:

Feet		Feet	Formation
0	to	3	Black top soil
3	to	17	Coarse sand & gravel, boulders
17	to	25	" " " "
25	to	40	Coarse sand
40	to	45	" " & gravel
45	to	55	" "
55	to	60	Med. sand, trace of clay
60	to	65	Med. coarse sand, trace of gravel
65	to	76	Med. sand
76	to	80	Hard pick clay
80	to	87	hard gray, gravely clay
87	to	102	Med. sand
102	to	107	Med. coarse sand, trace of gravel, some boulders
	to		
	to		
	to		
	to		
	to		
	to		



25. Remarks:

10" pipe is approx. 1' above ground level. Also the bottom 5' of this screen is larger opening and did not have a slot in it. 3/8" steel plate

LOG OF WELL 7

Layne-Western Company

721 ILLINOIS AVE. AURORA, ILL.

TEST HOLE No. 2-C7

TEST WELL REPORT Well 7

1. Owner. E. F. Goodrich Chemical Co. Contract No. (C-3-2-) Date. 10/25/C7
2. City Henry State. Ill.
3. Drillers Name Wayne Geer Helpers Ralph Chilcum
4. Static Water Level 61' [illegible] How Obtained — Washed ( ) Pumped ( )
5. Size Mud Pit — Length 10' Width 6'

DRILLERS LOG

TOP FT.	BOTTOM FT.	MUD LOSS INCHES	MUD WEIGHT	DESCRIPTION OF FORMATION	REMARKS
0'	1'			Dark brown silty top soil	
1	4½			Brown sandy clay	
4½	35			Brown silty red. sand to coarse gravel, boulders intermixed	losing circulation
35	88	3'6"		Gravel	Boulder at 77½'
88	90½			Gray clayey silt	and 86½'
90½	91			Red. sand to coarse gravel	
91	94			Red gray sandy clay	
94	107½	13"		Gray red. sand with some red. [illegible]	Boulder 97 to 101'
107½				Dark gray shale	
				Bottom of hole 110'	
				4" black steel casing + 2' to 105½'	
				5" Johnson silicon red brass	
				screen with .25 slot set 105½'	
				to 100.'	
					Took split spoon samples at:
				65' - 67½'; 70' - 71'; 80' -	
				81½'; Red gravel in bottom of	
				89' - 90½ sample; 102' - 103½'	

(See Other Side)

LOG OF WELL 10

TEST WELL REPORT Pilot hole for Well 10 – Drinking Water Well

TEST HOLE NO. 1-74

Layne-Western Company, Inc.

[illegible] • Aurora, Illinois 60507 • Phone 312 851 0941

1. Owner B. F. Goodrich Contract No. C-1270M Date 3/26/74
2. City Henry State Illinois
3. Driller's Name Jim Barker Helper's Steve Lumbert
4. Static Water Level How Obtained – Washed ( ) Pumped ( )
5. Size Mud Pit – Length 12' Width 4'

DRILLERS LOG

FROM	BOTTOM FT.	MUD LOSS INCHES	MUD WEIGHT	DESCRIPTION OF FORMATION	REMARKS
0	1			Black sandy topsoil	
1	3			Brown clayey sand	
3	6			Brown sand	
6	35			Fine sand to coarse gravel	
35	39			Fine sand to small gravel	
39	78			Fine sand to coarse gravel	
78	95			Fine to coarse sand some fine to coarse gravel	
95	99			Fine sand to medium gravel	
99	100			Boulder	
100	103			Pink sandy clay with gravel embedded	
103	105			Gray sandy clay with gravel embedded.	
105	115			Dark gray shale	
115	T.D.				
		Mud Loss		S.S. Samples @	
6'	35'	25"	9.4	75'	
35'	39'	4"	9.4	80'	
39'	70'	11"	9.8	85'	
70'	75'	2"	9.8	90'	
75'	90'	4"	9.6	95'	
90'	95'	2½"	9.6		

(SEE OTHER SIDE)